The OIL WEEKLY

10¢ A COPY

Exclusively Devoted To The Production and Transportation of Oil and Gas

May 3, 1929 **Volume 53. No. 7**

The Tongs that *Speed up* production

IT'S A WILSON

First in
Safety
Speed
Strength
Convenience

BYRON-JACKSON CO.
OIL TOOL DIVISION
2150 E. Slauson Avenue, Los Angeles, California

Tulsa, Okla. *(Warehouse)*
214 E. Brady St.

Houston, Texas
2201 Breckenridge Street

Fort Worth, Texas
814 Dan Waggoner Bldg.

New York City
1245 Graybar Building

The Chain that has no "weakest link"

The "VULCAN" *proof tested flat link chain*

Large size links provide greater bearing on tool-joints and

INCREASED STRENGTH

UNFAILING strength combined with handiness—that's *GENUINE* WILLIAMS' "VULCAN" Back-up Tongs. From proof-tested, CERTIFIED chain to sturdy handle, it's grit and stamina clear through, the most efficient and economical back-up tongs in the oil fields.

Try "Vulcan" No. 115½ on those tool-joints. So compact as to be practically as easily handled as the smaller No. 115, it is 50% stronger. Literature?

J. H. WILLIAMS & CO.

"The Wrench People"

New York BUFFALO Chicago

GENUINE WILLIAMS

SUPERIOR DROP-FORGED TOOLS

"VULCAN" BACK-UP TONGS

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 33 01 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1 916, at the post office at Houston, Texas, under act of March 3, 1897.

4 FEATURES OF GASO PUMP, FIG. 1508

1 Main and Pinion Shaft bearings are Timken Tapered Roller Bearings.

2 Main and Pinion Gears of continuous tooth Herringbone construction.

3 H-Column Connecting Rod, with babbitt-lined, removable bronze shell at crank end.

4 Pump is fully enclosed, dust-proof, and entirely self lubricated.

Gears Run on Massive TIMKEN BEARINGS

A factor in the outstanding efficiency and durability of Gaso Fig. 1508 Pump is the Timken Tapered Roller Bearing equipment on both main and pinion gears.

In this pump, friction and wear have been reduced to the minimum. Users are obtaining notable service as the result. Ask for complete information.

GASO PUMP & BURNER MFG. COMPANY
TULSA, OKLA.
210 Petroleum Bldg., Fort Worth, Texas.
535 Broadway, New York, N. Y.

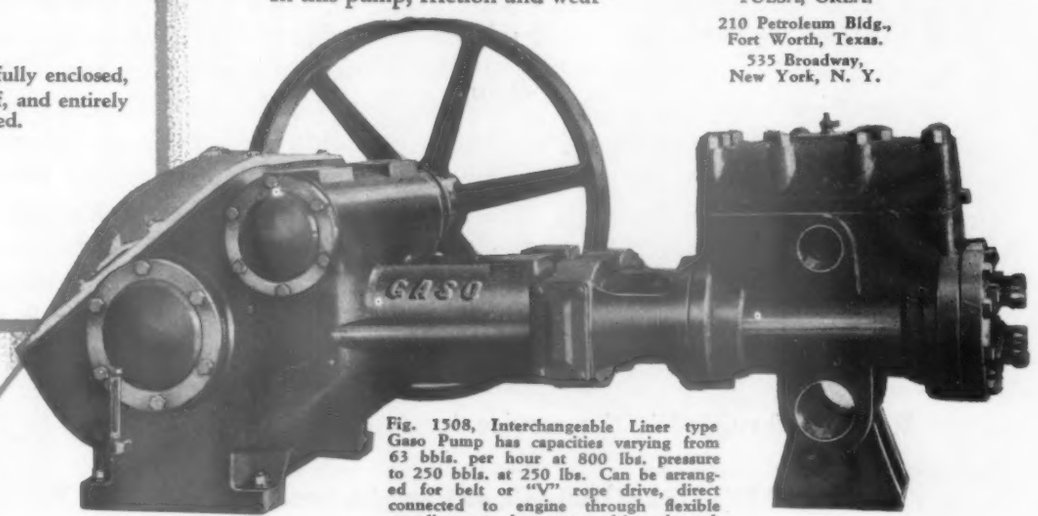


Fig. 1508, Interchangeable Liner type Gaso Pump has capacities varying from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. at 250 lbs. Can be arranged for belt or "V" rope drive, direct connected to engine through flexible coupling, or for motor drive through silent chain or reduction gears.

GASO PUMPS
for every oil industry need

ANOTHER APPLICATION OF **SKF** BEARINGS
IN THE OIL INDUSTRY BY THE

Phillips Petroleum Company

YOU MAY BUY A BEARING AS A BARGAIN BUT TRY AND GET A BARGAIN OUT OF USING IT

for

Nothing is apt to cost so much as a bearing that cost so little.

SKF Puts the Right Bearing in the Right Place

"Running Extremely Well" is Verdict that SKF Bearings are Profitable Investment

"IT HAS been running extremely well, with no rod trouble and no lost motion, either in the Motor Jack Shaft or the Bent Wheel Jack Shaft," is the Phillips Petroleum Company's verdict on this oil well pump rig equipped with SKF Anti-Friction Bearings. The 25-foot bull wheel and Pitman Pin are mounted on SKF Spherical Bearings and the countershaft is carried on SKF Ball Bearings.

Rough and rugged is the service to which oil field equipment is subjected and it must stand the gaff twenty-four hours a day if necessary. Despite such strenuous operation, reliability and maintained efficiency are expected. All these demands are met fully by SKF Spherical and Ball Bearings because of their long-life, freedom from adjustment and constant maintenance. And the slightly higher cost is not an expense but an investment which quickly pays dividends under oil field conditions.

SKF INDUSTRIES, INC., 40 East 34th Street, New York, N. Y.

2280

SKF

Ball and Roller Bearings

Say you saw it in The OIL WEEKLY

Don't Compromise with Quality

USE LANDIS

There can be no compromise with Quality when Quality is interpreted in terms of clean cut, well formed threads. Such threads are indicated by the A.P.I. Specifications for the protection of the Oil Industry, and such threads are produced by the Landis Pipe Threading and Cutting Machine. There is ample proof of this in the dominating number of Landis Machines used in every Oil Field.

Principles distinctive to Landis, the variable rake angle and the shearing action of the Landis chaser, insure this quality of thread. The Landis chaser below produces a full length of tapered thread regardless of the number of times it has been reground.

Above is shown a field shop in Oklahoma. There is no compromise here. They are producing threads rapidly and economically—but they do not compromise with Quality—They use Landis.

Write us today.

LANDIS MACHINE COMPANY

WAYNESBORO, PENNA., U.S.A.

DETROIT OFFICES: 5928 SECOND BLVD.

Represented in the Domestic Oil Fields by: Colcord-Wright Machinery and Supply Co., St. Louis, Mo.; D. S. Mair Machinery Co., Houston, Tex.; Woodward Wight & Co., New Orleans, La.; Herberts Machinery & Supply Co., Los Angeles; Herberts Moore Machinery Co., San Francisco, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

Say you saw it in The OIL WEEKLY

A Letter from Harry G. Nye

NYE

Thin Blade Cutter Wheels Knurled or Smooth Edge

Made to Fit All Standard Makes of Pipe Cutters

Knurled Edge

Smooth Edge

Nye cutter wheels are made from the highest grade tool steel, and are hardened and tempered in oil. Blades about 1/16th of an inch thick and straight from hub to cutting edge. Cut with one-third the time and power required by the old type wheels. And also they are—

ABSOLUTELY GUARANTEED

TO THE OIL MEN OF THE U. S. A.

Friends:

I see they are talking of changing the calendar to 13 months. While they are adding a month I hope they will stick in a few more weeks, because the 52 we had are about all used up. There's Old Home Week, and Fire Prevention Week, and Take-a-Bath Week, and Raisin Week, and Thrift Week, until we don't know if it's this week, or last week, or next week.

So we need a few more weeks. There ought to be at least one week that is no week, some week when we don't have to eat apples if we don't like 'em, or clean up and paint up if we don't want to. There ought to be one week that is Tend-to-Business Week, or Boost-Your-Own Game Week, instead of Save-the-Wildflowers Week, or some other darned week.

These are all fine ideas, and I am in favor of all of 'em, but, with so many weeks, I am beginning to weaken, at that. When I start for the garage some Monday morning Mrs. Nye reminds me that this is Walk-to-the Office Week. If I want sausage for breakfast, it's Eat-No-Meat Week. If I buy a new suit, it's Wear-Your-Old-Clothes Week.

There are things at the factory that I ought to take care of, but I belong to the Soup and Sinkers Club, and it's Get-a-New-Member Week. If I want to go to a show, it's Stay-at-Home Week. If I want to stay at home, it's Save-the-Theatre Week. In fact, the last few weeks I've got so weak that I've got to get up a week myself.

So this week is Buy-Nye-Dies Week. All you are supposed to do is to step out in the shop and see what you need in the pipe-tool line, whether dies or what, and then call up your jobber, or sit down and write me. I'll be sitting right here, all week, hoping to hear from you this week. It looks to me like this week ought to be a big week.

And it's for a noble purpose, too, and not only because with Nye Tools you will be able to do about three weeks' work in two weeks, but the entire proceeds this week will be used for the relief of a poor family out on the north side, whose name is Nye.

Hopefully yours,

HARRY G. NYE.

Otherwise Known As

THE NYE TOOL & MACHINE WORKS

4120-30 Fullerton Avenue

Chicago, Ill.

(Copyright, 1929, by Harry G. Nye. All rights reserved.)

Nye Drop Forged Pipe Cutter

No. 1-A	⅛ to 1¼"	$2.75 net
No. 2-A	¼ to 2"	3.30 net
No. 3-A	1 to 3"	5.50 net

Nye Self-Locing Vise

No.	Pipe	Vise, Complete Net
00	⅛ to 2 "	$2.82
10	⅛ to 2½"	3.34
20	¼ to 3½"	5.00
30	½ to 4½"	7.33

Nye Saunders Pipe Cutter

No. 1	⅛ to 1"	$2.00 net
No. 2	1 to 2"	3.00 net
No. 3	2 to 3"	7.33 net
No. 4	2½ to 4	12.00 net
No. 5	4 to 6"	18.67 net

Pipe

as *fine* as can be made

The most suitable steel for the purpose that it is possible to produce is used in making Bethlehem Steel Pipe.

Take a length of Bethlehem Steel Pipe. Test it in any way you please. Note its strong weld, its freedom from scale, its exceptional softness and ductility. See how easily it is cut and threaded, how clean and strong the threads are!

This is quality pipe! Pipe that will meet any test. Pipe that you can use with confidence on the most difficult jobs, where the requirements are most exacting—pipe that is as fine as can be made.

BETHLEHEM STEEL COMPANY

General Offices: Bethlehem, Pa.

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Detroit, Cincinnati, Chicago, St. Louis, San Francisco, Los Angeles, Seattle, Portland, and Honolulu.

Bethlehem Steel Export Corporation, 25 Broadway, New York City
Sole Exporter of our Commercial Products

BETHLEHEM STEEL PIPE

Say you saw it in The OIL WEEKLY

8 TIMKENS mean 8 ADVANTAGES in the Young Drilling Engine

"Read the specifications," says a circular of the Young Engine Corporation of Canton, Ohio—"you will agree the Big Boy engine has all the attributes of a successful machine."

Prominent in the list are eight advantages—*eight Timken Tapered Roller Bearings.*

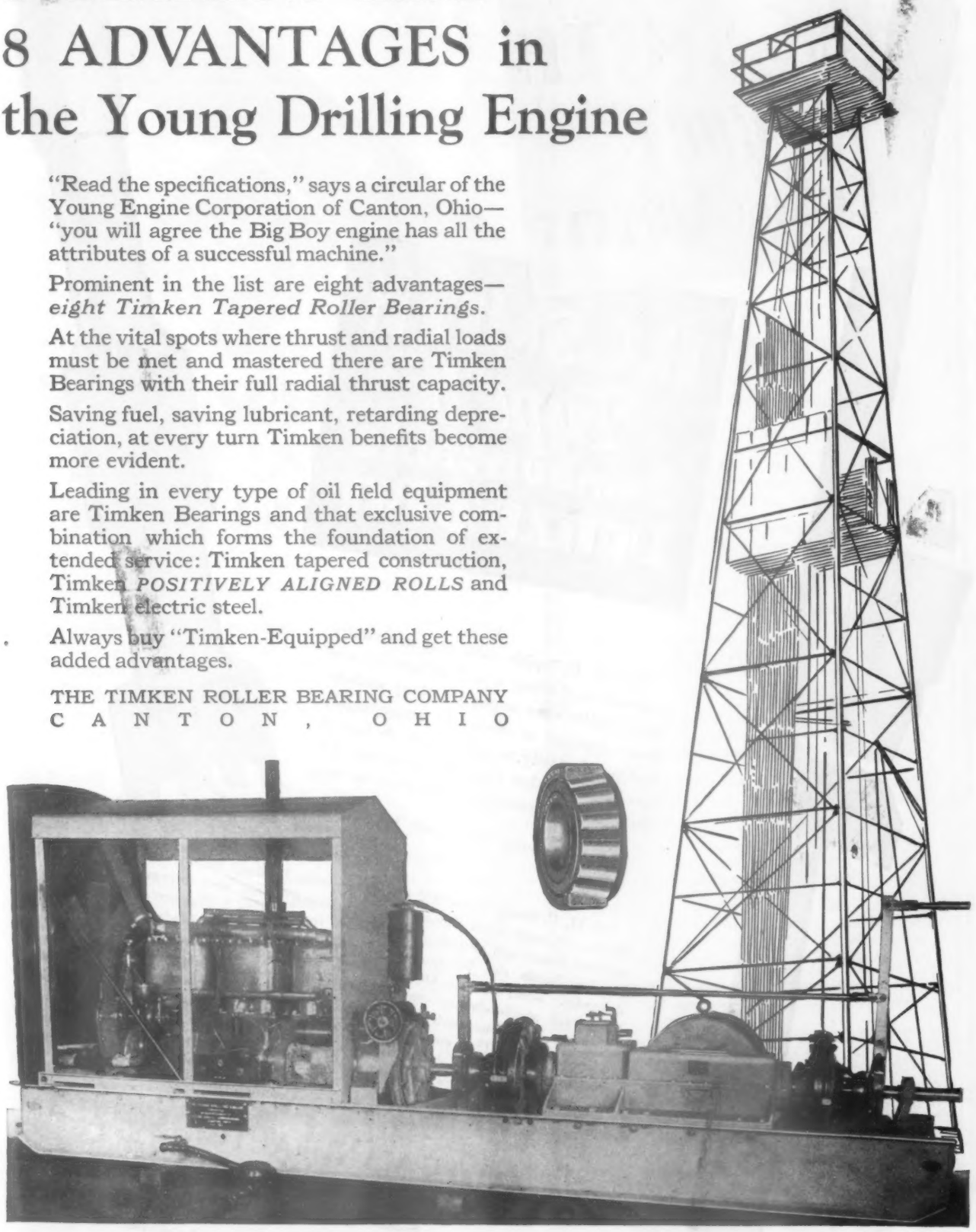
At the vital spots where thrust and radial loads must be met and mastered there are Timken Bearings with their full radial thrust capacity.

Saving fuel, saving lubricant, retarding depreciation, at every turn Timken benefits become more evident.

Leading in every type of oil field equipment are Timken Bearings and that exclusive combination which forms the foundation of extended service: Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken electric steel.

Always buy "Timken-Equipped" and get these added advantages.

THE TIMKEN ROLLER BEARING COMPANY
C A N T O N , O H I O



TIMKEN *Tapered Roller* **BEARINGS**

Two H. C. Smith tools that are vitally essential to drilling a well efficiently and successfully—*you might get along without them*—but not as efficiently, economically and satisfactorily as *with* them—in fact, it has been said that every operator pays for these tools whether he uses them or not.

There's a moral here worth heeding.

The H. C. Smith Type "C" Coring Outfit. Almost revolutionary in its superior design and performance. Renewable heads can be economically discarded when dull. Drop-forged heads are absolutely uniform in dimensions and permit perfect centering of core catcher. This outfit will take cores in any formation that a fish-tail, disc or 4-way bit will penetrate. Catalog No. 20 gives complete data.

H. C. Smith Type "B" Demountable Drilling Bit. New design and construction that brings new results in the hole. The serrated construction of the bit blades allows easier penetration of either hard or soft formations—and naturally—more hole. Four-way construction of the bit lessens strain on the drill pipe. Winged section above bit steadies the bit in the hole. Heavily set with diamond substitute metal and then hard faced. Complete information on request.

H. C. SMITH MANUFACTURING CO., Inc.

LOS NIETOS, CALIFORNIA

Branch Offices and Warehouses: Ventura, Calif.

Bakersfield, Calif.

Oil Well Supply Co., *Exclusive Sales Distributors,* Outside of California, for H. C. Smith Coring Equipment and Demountable Drilling Bits.

Identify by
JONES & LAUGHLIN
on every length

12 INSPECTIONS INSURE UNIFORMLY HIGH QUALITY

J & L's adequate resources, ownership control of each process from ore mining to pipe making, nearly 80 years of experience in iron and steel making, and rigid inspection through each step of manufacture, are your guarantees that every length of J & L Seamless Casing you order is as nearly perfect as seamless casing can be made. Beginning with chemical and physical tests of raw materials, iron ore, coke and limestone (from J & L's own mines and quarries), inspection on J & L Seamless continues without interruption until the twelfth and final checking is made as the pipe is loaded for shipment.

In addition to the twelve tests and inspections (listed at right) a milling machine is kept busy constantly machining out samples for pull tests to insure tensile strength safely within requirements of the trade. Drillings are also taken during mill operations to be analyzed for chemical composition, and samples are microphotographed frequently to check grain structure.

Oil men declare: "There's no better Seamless made than J & L."

JONES & LAUGHLIN STEEL CORPORATION

Jones & Laughlin Building
PITTSBURGH - - PENNSYLVANIA

INSPECTIONS OF J & L SEAMLESS

1 Chemical tests of raw materials made at the mines and quarries, also before charging into blast furnaces.

2 Thorough analysis of pig iron produced by blast furnaces and metallurgical inspections as pig iron is made into steel in open hearth furnaces.

3 Chemical analysis for composition as steel is poured from open hearth furnaces into ingot molds.

4 Ingots rolled into blooms under temperature control.

5 Blooms pickled in strong acid to bring out defects. Inspectors pass blooms only after visible defects have been chipped out with pneumatic chisels.

6 As seamless tubes come from the straightener, inspectors scrutinize both outside and inside surfaces with the aid of specially designed lamps.

7 Ends trimmed; then pipe is inspected for wall thickness and correct outside diameter and roundness.

8 Pipe threads checked with certified gages and second inspection made for flaws, to insure clean cut accurate threads of proper pitch and taper.

9 Couplings as produced in our mills are closely inspected for correct tapping, threads accurately gaged for pitch and taper and checked on specially designed machines for alignment.

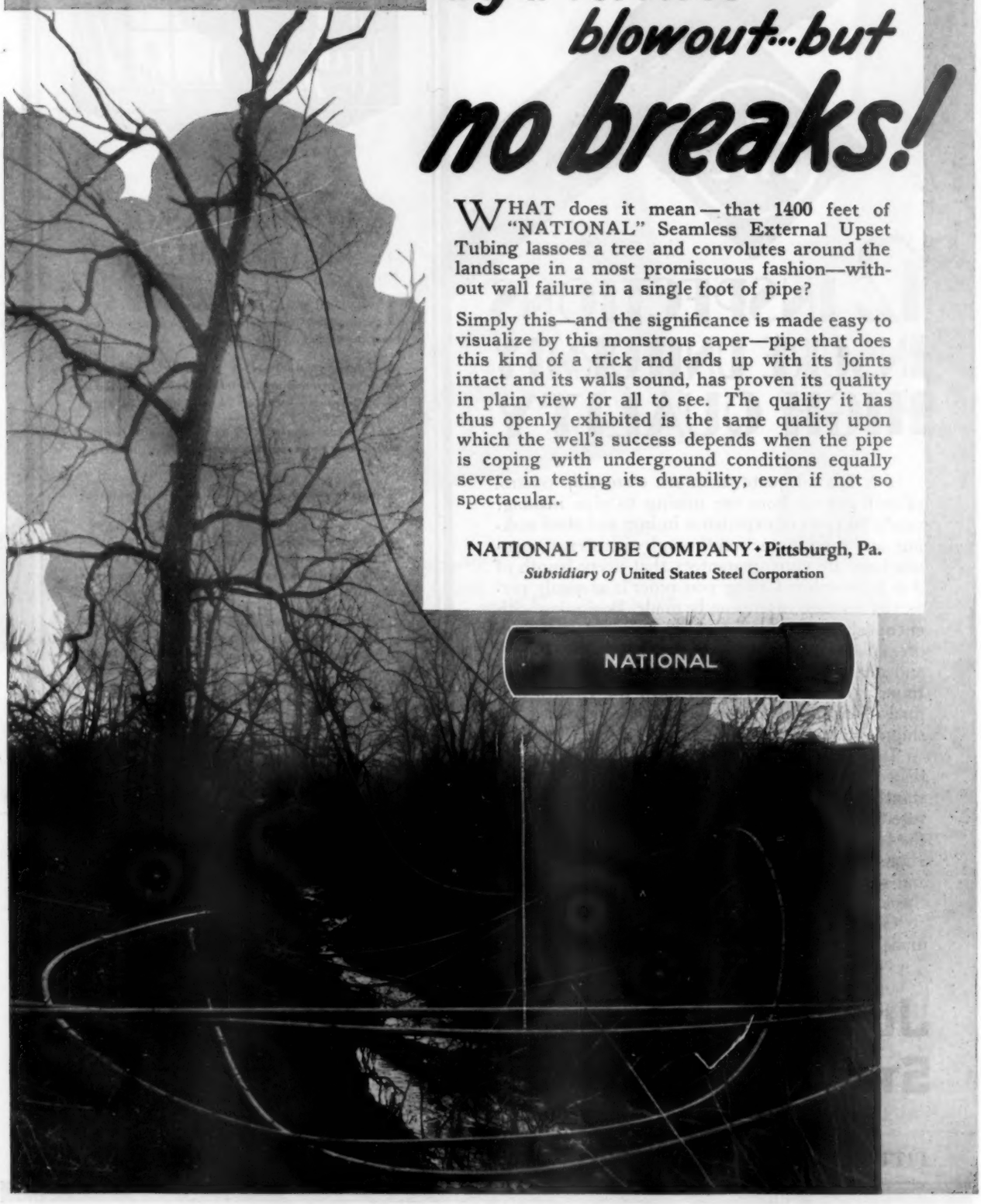
10 All items of previous inspections rechecked on testing benches, and stencil marks applied.

11 Each length given hydrostatic pressure test before rust-resisting coating is applied and pipe is delivered to shipping platform.

12 Final inspection of each length as it is loaded for shipment.

J&L
STEEL

Treed and Bent by a terrific blowout...but no breaks!



WHAT does it mean—that 1400 feet of "NATIONAL" Seamless External Upset Tubing lassoes a tree and convolutes around the landscape in a most promiscuous fashion—without wall failure in a single foot of pipe?

Simply this—and the significance is made easy to visualize by this monstrous caper—pipe that does this kind of a trick and ends up with its joints intact and its walls sound, has proven its quality in plain view for all to see. The quality it has thus openly exhibited is the same quality upon which the well's success depends when the pipe is coping with underground conditions equally severe in testing its durability, even if not so spectacular.

NATIONAL TUBE COMPANY • Pittsburgh, Pa.

Subsidiary of United States Steel Corporation

"We can't shut down Number Six! Get it running!"

ANY MAN who puts old-type flexible couplings in a plant is flirting with disaster.

Shut-downs cost money. One machine often stops a whole plant operation.

But as long as machines are connected by couplings made with flexible pins, bushings, springs, discs or grids that fatigue and fail—shut-downs for repairs are bound to get you!

Banish Shut-downs

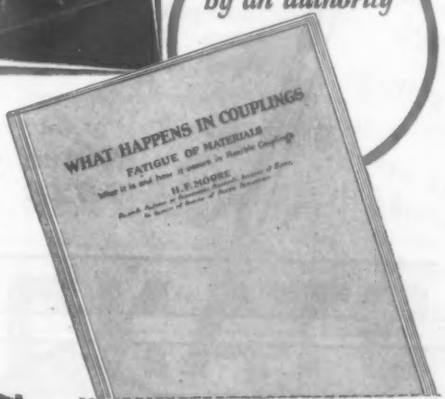
It is all so unnecessary. Thousands of plants have banished shut-downs forever by equipping direct-connected machines with Fast's Self-Aligning Couplings.

From huge rolling mill drives down to 1-inch shaft pumps, fans and other machinery, Fast's coupling absolutely eliminates all chance of failure—because it has no flexible members to fatigue or fail, nothing to wear out, nothing to be replaced.

Start to Stop—Now!

Stop future shut-downs for coupling repairs by seeing to it that all new machinery is equipped with Fast's Couplings. Start now by replacing (before it breaks down again) the most troublesome drive in your plant—and prove what Fast's Mechanical Flexibility means.

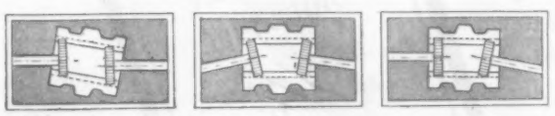
Send for Free Book by an authority



Oil Field Sales Representatives:

HOUSTON
M. N. Dannenbaum

LOS ANGELES
Thomas Machinery Co.



Two spur gears, one on each shaft end, are completely and continuously meshed in oil with the internal gears of a floating sleeve. The shafts and sleeve revolve noiselessly as one unit, allowing free angular and lateral movement.

USE THE COUPON

Get this authoritative book. It's free. Learn how and why Fast's Flexible Coupling banishes coupling failures forever.

FAST'S
Self-Aligning
COUPLING

The coupling without flexible bushings, pins, springs, discs, grids or any other flexible materials.

THE BARTLETT HAYWARD COMPANY
217 Scott Street - - - - BALTIMORE, MD.

Please send me the Free Book by Prof. Moore

Company .....

Individual .....

Address .....

City ..... *State* .....

Say you saw it in The OIL WEEKLY

From beginning to end, Standard Seamless and Etna Welded Pipe are products of exacting workmanship and materials. The best pipe steel is used, the process of manufacture is regulated to the closest degree with modern and efficient furnaces and machinery and the inspection of the finished production is intelligent, rigid and uncompromising.

Only one grade of pipe is made for customers use and that is the very best. The pipe that does not come up to the rigid standard this company has set for their product, automatically becomes scrap. No "seconds" are manufactured . . . none are sold.

Seamless

CASING
TUBING
DRILL PIPE
(Regular and Heat Treated)
LINE PIPE
STILL TUBES

Sizes 2 inch to 13⅜ inch O.D.

Welded

STANDARD PIPE
CASING
TUBING
LARGE O. D. PIPE
LINE PIPE
DRIVE PIPE
DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

Since 1828

STANDARD
ETNA

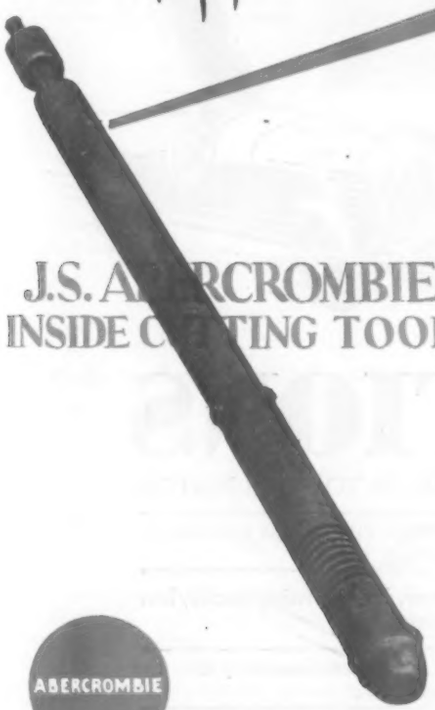
SPANG, CHALFANT & CO., INC.

General Offices: **CLARK BUILDING, PITTSBURGH, PA.**

Sales Offices: CHICAGO, ILL. NEW YORK, N.Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.
Mills: ETNA, PENNA. SHARPSBURG, PENNA. AMBRIDGE, PENNA.

SERVICE MEN

AND ABERCROMBIE TOOLS AVAILABLE ON A CONTRACT BASIS.



J.S. ABERCROMBIE
INSIDE CUTTING TOOL

The Abercrombie plan of sending service men and tools out on a contract basis, makes it the most economical method of reaching deeper sands, salvaging old casing or completing difficult fishing jobs.

Our service men or operators, are long experienced drillers who have spent years on the derrick floor, before taking up the operation of the Abercrombie Cutting Tool.

In our many years of service to the oil industry we have continually improved and perfected the cutting tool until it is now the best known instrument for performing its many services to the oil industry.

Today, these men and tools are available on a contract basis which tells you in advance the cost of the job and the results to expect. Let us give you an estimate on your next cutting, fishing or salvaging job.

ABERCROMBIE

RED BALL SERVICE

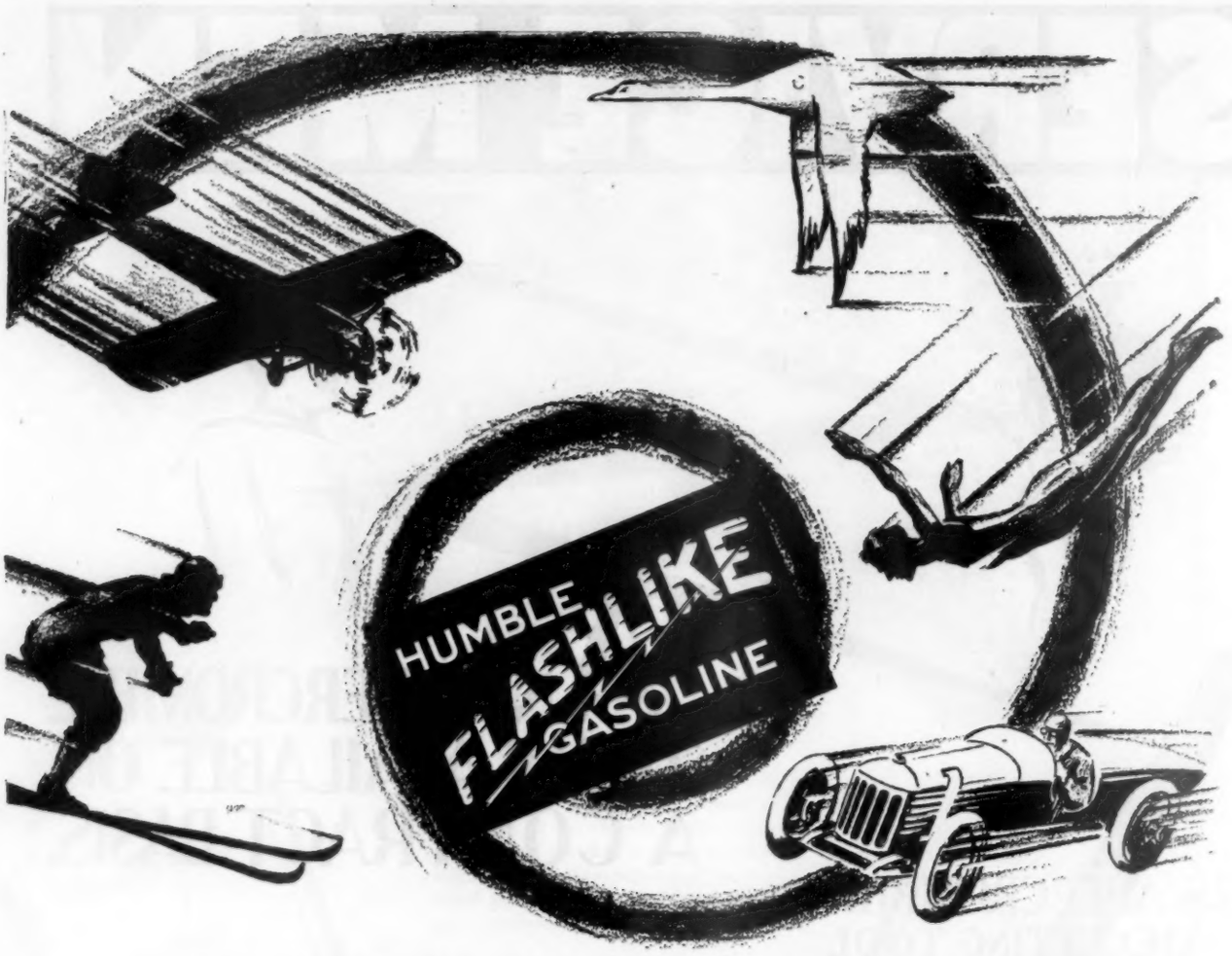
Long Distance 200—Fairfax 5317

Twelve skilled operators,—all practical drillers with years of cutting experience are ready to start serving you at your command.

Abercrombie Tools are made in all sizes—specify inside diameter of casing when ordering our services.

J. S. ABERCROMBIE Co.
616-18 West Bldg. Houston, Texas

Say you saw it in The OIL WEEKLY



SPECIFICATIONS

LABORATORY ANALYSIS		WHAT IT MEANS TO YOUR MOTOR
Initial Boiling Point	110 Maximum	Easy starting---First in the get-away---No sputtering
% distilled at 221° Fahr. % distilled at 284° Fahr. % recovery	25 Minimum 52 Minimum 97%	More power, long burning stroke, less gear shifting
End Point	400	Complete vaporization---complete combustion
Doctor Test	OK	Clean odor---never offensive
Corrosion Test	OK	No choking or corrosion of gas line
Color	Plus 25	Highly refined, clean, and clear
Sulphur	less than 1/10 of 1% Max.	No pitting of valves, or fouling of oil
Gum Test	OK	No resinous precipitate to clog carburetor

Humble Oil & Refining Co.

Highflex Belts meet the most exacting requirements for oil well drilling and pumping. Wherever Highflex has been used it has beaten previous records for durability and resistance to injury from clamps

Highflex principle eliminates bootlegging

Exclusive Goodrich belt construction brings greater efficiency in oil drilling and pumping . .

★ ★ ★

THE Goodrich Highflex principle does away completely with the drawbacks of old-type, folded-edge practice in belt construction. In Highflex belting, each ply ends at the edge of the belt.

Since the edge of Highflex belting is not folded, it affords no obstacle to the escape of air that may become trapped in the belt. In ordinary folded-edge belting, entrapped air is forced to travel lengthwise through the belt.

Because of its unique construction all excess stretch in Highflex belts is removed while the belt is being made —fewer take-ups are necessary.

Results of the Highflex principle are: greater power, minimum slippage, high resistance to injury from clamps, and smooth, steady running under even the most adverse conditions.

One oil driller reports his Highflex belt "in perfect condition after six months on Westinghouse twin drilling drive, where other belts quickly bootlegged."

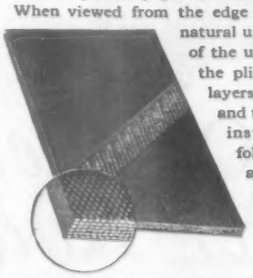
We will gladly send additional information. Write to The B. F. Goodrich Rubber Co., Est. 1870, Akron, Ohio. (In the West, Pacific Goodrich Rubber Company, Los Angeles, Cal.) or the branch nearest you.

Fig. 1

Fig. 2

You can test the Highflex Principle this easy way:

Bend a pad of paper or booklet with the fingers. When viewed from the edge (fig. 1) it assumes a natural uniform curve because of the unhampered action of the plies. Now, if several layers of paper are folded and then bent (fig. 2), you instantly see how the fold distorts the curve and impedes the free movement of the individual layers.



★ ★ ★

Oil Field Branches

PACIFIC GOODRICH RUBBER CO.:
1386 East 7th Street, Los Angeles, Cal.
650 Second Street, San Francisco, Cal.
2625 Walnut Street . . . . . Denver, Col.

THE B. F. GOODRICH RUBBER CO.:
1201 Young Street . . . . . Dallas, Texas
2422 Broadway . . . . . Kansas City, Mo.
285 S. Peters Street. New Orleans, La.
and other principal cities.

Goodrich

Say you saw it in The OIL WEEKLY

No detail is *too* small for careful attention in the Axelson plants

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

AXELSON *Oil Well Pumps & Sucker Rods*

Axelson Machine Company

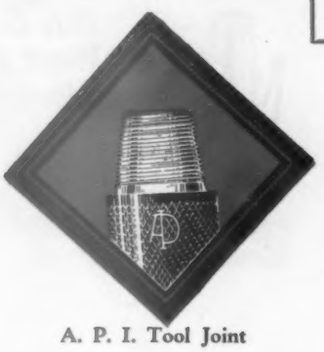
P. O. Box 337, Los Angeles
Tulsa St. Louis
New York City, 30 Church St.

Mid-Continent and Eastern Distributors:
Frick-Reid Supply Corporation

Say you saw it in The OIL WEEKLY

Satisfaction

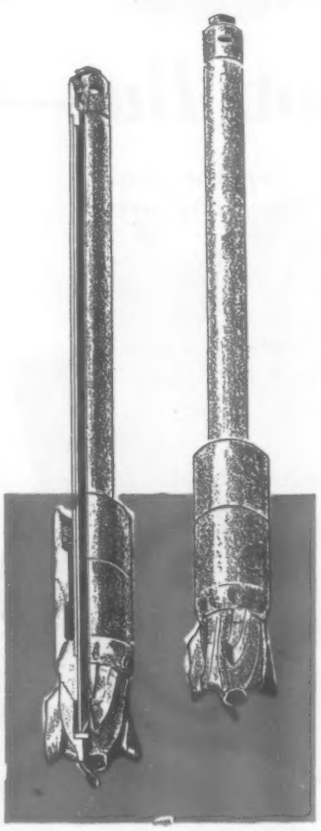
is the result of using BREWSTER *Products*



A. P. I. Tool Joint

A. P. I. Fish Tail Bit

A. P. I. Gumbo Bit



PERFECTION Core Barrel

Herbert Spencer said:

"There is a principle which is a bar against all information and which will keep a man in everlasting ignorance: that principle is contempt prior to investigation."

If we're right—you're wrong in not trying it. If we're wrong—you're right in not using it.

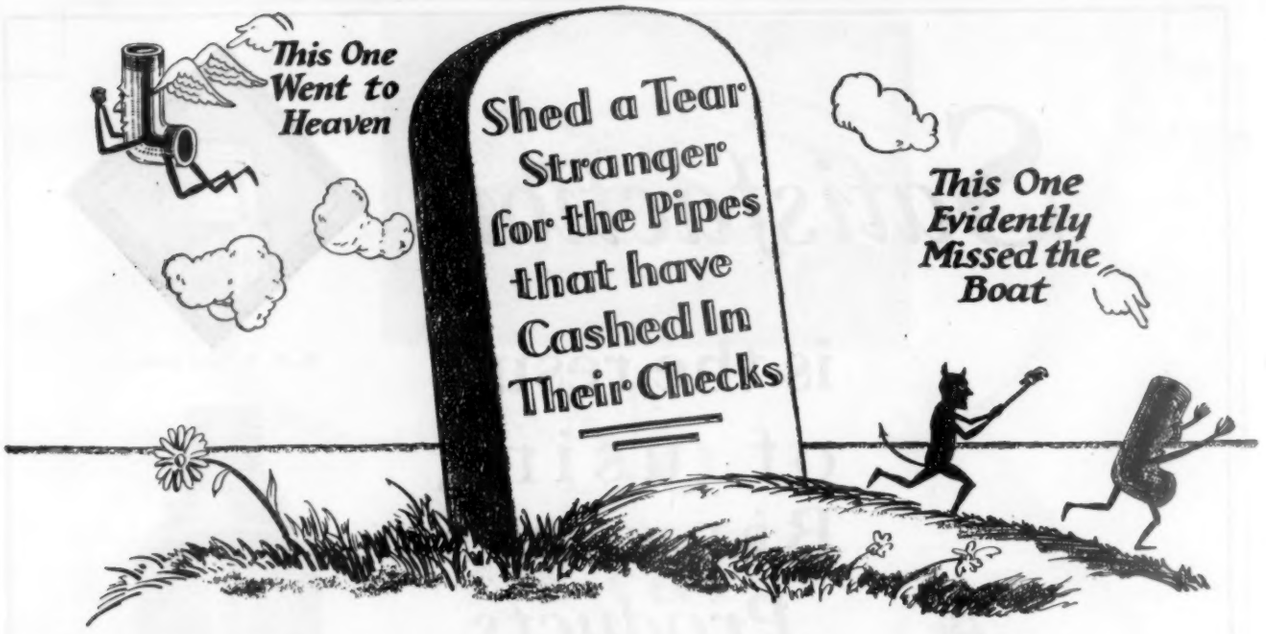
The Brewster COMPANY~INC.

SUCCESSORS TO OIL CITY IRON WORKS INC.

Shreveport, Louisiana

Distributed by: Continental Supply Co., *All Stores*—Wilson Supply Co., *Houston and Beaumont, Texas.* Hercules Supply Co., *Dallas, Tex.*—T. T. Word Supply Co., *Lake Charles, La.*

Exporters: Continental Well Supply Company, 74 Trinity Place, New York City, N. Y.


This One Went to Heaven
Shed a Tear Stranger for the Pipes that have Cashed In Their Checks
This One Evidently Missed the Boat

They Were A Hardy Lot, *But*—

STIFF PIPES, stubborn pipes—misfit pipes, rusty pipes—pipes with broken threads, pipes with hardening of the arteries—a hardy lot, stranger, but TRIMO took them all!

Maybe some went up; maybe some went down, but they all turned and turned fast when TRIMO grabbed them. They just stopped being stubborn and gave up the ghost when they felt those improved and mightier teeth.

TRIMO is all steel for strength with replaceable jaws for life-time service. It's the strongest wrench and the safest wrench that the oil industry can find.

TRIMO

TRIMONT MFG. CO., INC.
ROXBURY (BOSTON), MASS.

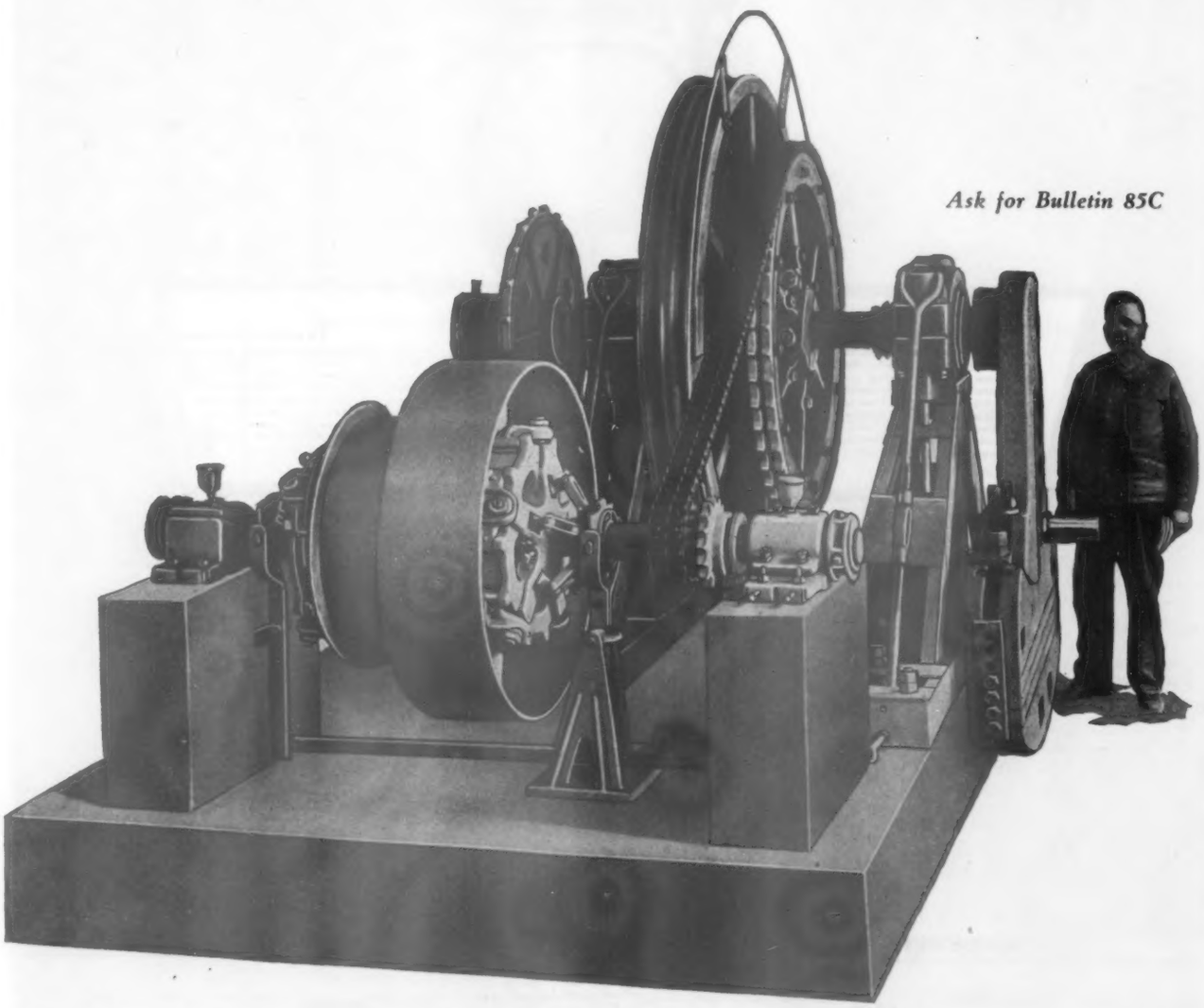
IMPROVED and MIGHTIER Pipe Wrench

Say you saw it in The OIL WEEKLY

OCS

Universal Rig Fronts

Ask for Bulletin 85C



For Cable Tool Drilling and Pumping, with Electric Motors, Steam Drilling Engines, or Oil and Gas Engines

Manufactured by

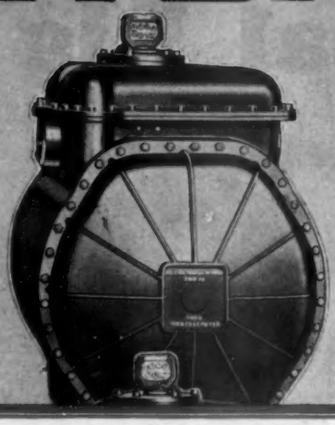
THE OIL COUNTRY SPECIALTIES MFG. CO.

COFFEYVILLE, KANSAS

HYNES, CALIFORNIA TULSA, OKLAHOMA SWEETWATER, TEXAS

Say you saw it in The OIL WEEKLY

IRONCASE



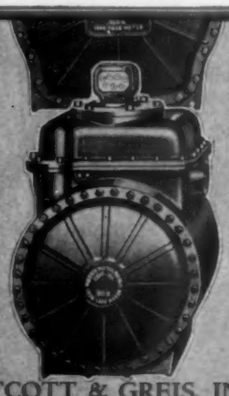
THESE modern Metric Ironcase Meters displace 60-B, 100-B and 200-B Iron case models. Retaining the same basic operating principles that have been so reliable for 18 years in the older Meters, they have increased capacities, less weight and important improvement features, now demonstrated sound and efficient by continuous service.

GREATER capacities for their weight . . . reduced weight for their capacities . . . the same revolutions per cubic ft. of gas measured.

Designed especially for measuring gas under pressure or vacuum.

Exclusive and new construction features make them the most modern of all gas meters.

PRACTICALLY perfect valve movement and wearing qualities have been attained . . . friction and squeaks have been eliminated by light weight valve covers . . . lubrication is accomplished during operation through an alemite system. Measuring efficiency has been promoted by a 3 position application of Timkin bearings.



Sales Service—WESTCOTT & GREIS, INC., Dallas—Tulsa—Los Angeles

METRIC METAL WORKS of the ERIE, PENNA.

METERS

AMERICAN METER CO., INC.

MADE TO MEASURE ACCURATELY!

An IDEA that has Money Value for You!

the NORVELL-WILDER - - - - Idea of *Specialization*

ONE big reason for a Supply House . . . . . to MAKE MONEY FOR THE OIL MAN.

In order to so serve the oil man as to make more money for him, a Supply House must specialize in supplying the needs of the oil man.

For EIGHTEEN YEARS the NORVELL-WILDER SUPPLY COMPANY has specialized in doing just this.

NORVELL-WILDER men, during these many years, have covered the oil fields of the Southwest, big and little. They have worked all night to get equipment to a well that was blowing in. They have hurried shipments in wagons that sunk in mud up to the axles. They have met train, ship and airplane schedules.

Specialization during these years has developed knowledge about many oil field problems that has a money value for the oil operator. Tools and equipment have been selected that have stood the test of time, thus saving the oil operator from experimenting. The value of new oil field equipment can better be judged because of this EIGHTEEN YEARS SPECIALIZED EXPERIENCE.

THERE IS A MONEY VALUE FOR YOU IN THIS SPECIALIZED EXPERIENCE. You hire experienced specialists because they make more money for you. By the same token you should discuss your problems with NORVELL-WILDER MEN whose advice to you is valuable because there is back of it years of specialized oil field experience.

See pages 356 to 367 in the Composite Catalog of Oil Field and Pipe Line Equipment.

NORVELL WILDER SUPPLY COMPANY · QUALITY AND SERVICE ·

NORVELL WILDER SUPPLY CO.

BEAUMONT HOUSTON SHREVEPORT FORT WORTH

DRILLING RESUMED IN LESS THAN 48 HOURS

When This Well Was Cemented with OILMAX

THE cement was *less than 48 hours old* when the drilling crew went back into action after this Grady County, Oklahoma, well was cemented with Oilmax. No costly 6 to 10-day delay when every minute meant money.

Oilmax Cement will give you the same dependable time and money-saving results —no matter how difficult the job. Used neat only—requires no accelerators or admixtures. And it gets *as hard* in 24 hours as Portland Cement in 10 days.

Oilmax hardens evenly — eliminates weak and soft spots. It is exceptionally plastic—slips quickly and easily—works in bailer or pump.

One trial will prove Oilmax more dependable than ordinary cement—both for setting casings and for difficult hole jobs. Try it next time and speed up your drilling operations.

Produced ONLY by
ASH GROVE LIME & PORTLAND CEMENT CO.
Founded in 1882
KANSAS CITY, MO. OMAHA, NEBR.
District Sales Office: OKLAHOMA CITY, OKLA. Phone Maple 0642.

Cementing the John B. Nichols well in section 2-4-8, Grady County, Oklahoma, with Oilmax.

Tests have proved that Oilmax Cement will produce, with 50% water by weight, in excess of 1500 pounds compressive strength in 24 hours —in excess of 2500 pounds in 48 hours — and have an ultimate strength of over 5000 pounds per square inch.

Oilmax is available through dealers. Packed in 5-ply paper bags. Shipped in mixed cars with Ash Grove Cement. Write us if your local dealer does not stock it.

2914

OILMAX CEMENT
FOR CEMENTING OIL WELLS

"STURDYBILT" SECTIONAL HOUSES

Save Money for the Oil Industry with an Actual 100 Per Cent Salvage Value

"STURDYBILT" SECTIONAL HOUSES are a realization of the Oil Industry's need for substantial housing facilities at low cost of initial construction and high salvage value.

"STURDYBILT" SECTIONAL HOUSES, adaptable to the peculiar needs of the Oil Industry for oil field lease, pipe line station or refinery use, are designed to afford the utmost in housing accommodations as well as low initial cost, quick construction and 100 PER CENT SALVAGE VALUE.

No. 413. Five-room "Sturdybilt" residence

No. 304. A "Sturdybilt" field office

No. 302. Five-room "Sturdybilt" lease house

Right—No. 504. Six-room "Sturdybilt" residence

Left—No. 202. Two-room "Sturdybilt" lease office

No. 411. Four-room "Sturdybilt" lease house with screened porch

No. 801. "Sturdybilt" bunk house and dining hall

No. 51. "Sturdybilt" two-car garage

It is conservatively estimated that in the Mid-Continent field alone the Oil Industry has a "dead" investment of well over a Million Dollars in standard constructed houses which could have been reclaimed had "STURDYBILT" SECTIONAL HOUSES been used instead.

For Seven Years "STURDYBILT" SECTIONAL HOUSES have been the leader in section-built houses for Oil Industry usage . . . their comparative value will endure over all other specifications with their actual 100 PER CENT SALVAGE VALUE against the low or absolute lack of salvage value of other types of oil field housing construction.

Descriptive Booklet on Request

SOUTHERN MILL & MFG. CO.

Manufacturers of "Sturdybilt" Sectional Houses

TULSA, OKLAHOMA

What do tubing jobs cost *your* company?

Tubing jobs mean wasted oil....dirt, discomfort and late hours for the men....extra men on the payroll....lost production during the shutdown....and many other additional expenses. You know what they are and you know what they cost you!

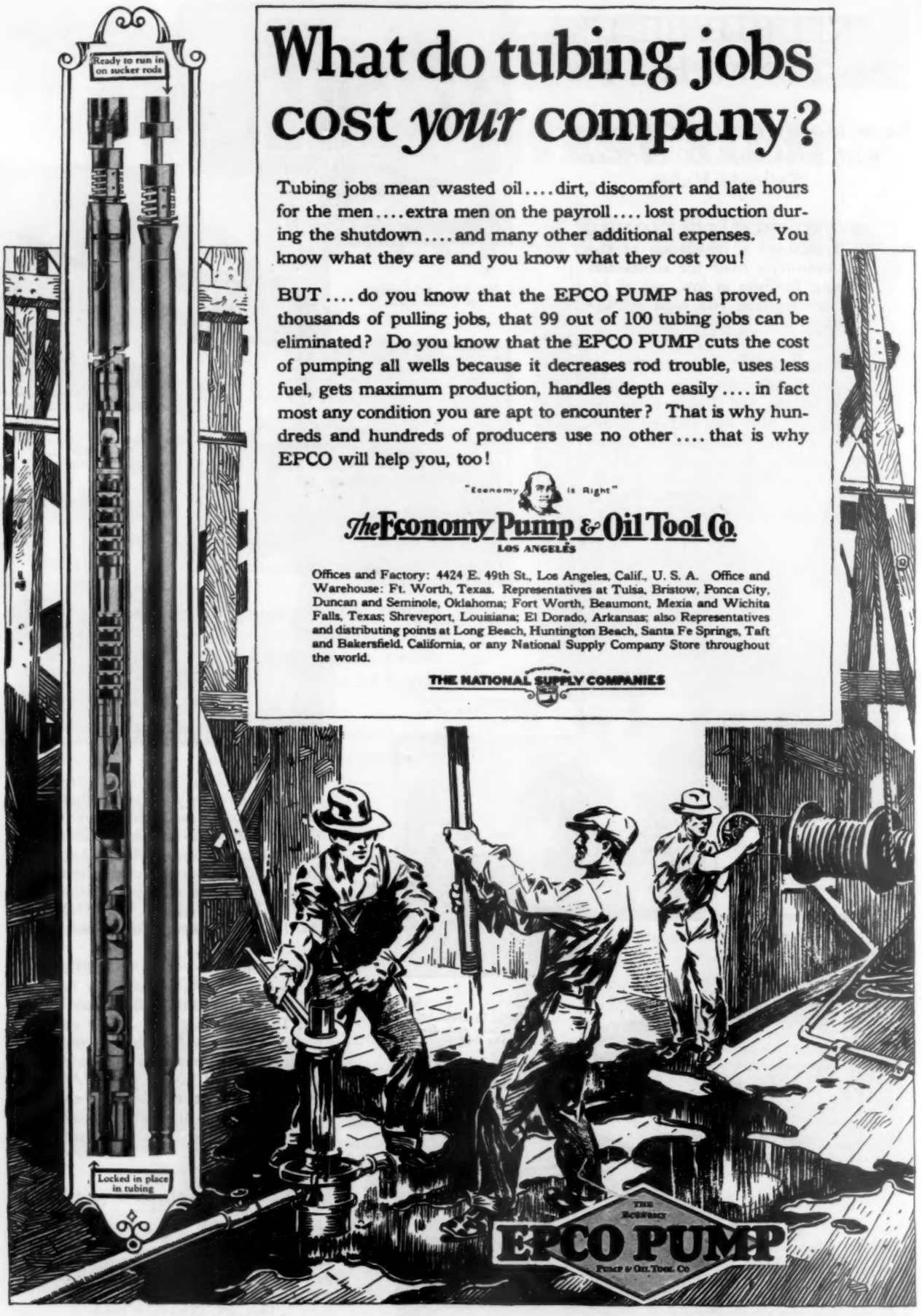
BUT....do you know that the EPCO PUMP has proved, on thousands of pulling jobs, that 99 out of 100 tubing jobs can be eliminated? Do you know that the EPCO PUMP cuts the cost of pumping all wells because it decreases rod trouble, uses less fuel, gets maximum production, handles depth easily....in fact most any condition you are apt to encounter? That is why hundreds and hundreds of producers use no other....that is why EPCO will help you, too!

"Economy Is Right"

The Economy Pump & Oil Tool Co.
LOS ANGELES

Offices and Factory: 4424 E. 49th St., Los Angeles, Calif., U. S. A. Office and Warehouse: Ft. Worth, Texas. Representatives at Tulsa, Bristow, Ponca City, Duncan and Seminole, Oklahoma; Fort Worth, Beaumont, Mexia and Wichita Falls, Texas; Shreveport, Louisiana; El Dorado, Arkansas; also Representatives and distributing points at Long Beach, Huntington Beach, Santa Fe Springs, Taft and Bakersfield, California, or any National Supply Company Store throughout the world.

THE NATIONAL SUPPLY COMPANIES

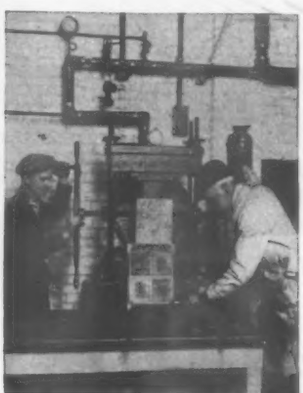


Say you saw it in The OIL WEEKLY

FROM SUMATRA TO Your well

Crude rubber as it arrives at the factory direct from Sumatra.

Adding chemicals during mixing, after which sheets are milled.



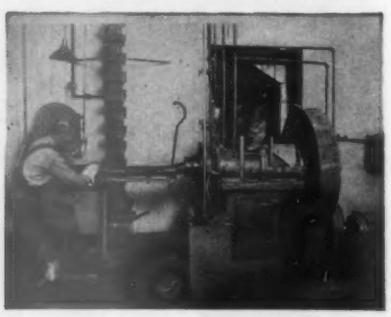
Experimental press in which test strips are cured. Three individual samples are tested and rechecked.

FROM Sumatra comes the highest quality crude rubber for use in the making of Bettis Protectors—and to Sumatra (as well as all other foreign fields) is returned the finished product for service in rotary drilling wells.

The manufacture of Bettis Protectors involves scientific processes and the recently completed factory in Los Angeles incorporates many special-built machines for testing, moulding and curing the product.

Patterson-Ballagh Corporation
Insurance Exchange Building, Los Angeles
Mid-Continent Distributors:
Bettis Sales Co., 616 Public National Bank Bldg., Houston
New York Office: 39 Cortlandt St.
Carried in stock at Los Angeles, Santa Fe Springs, Ventura, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas; New York City

Electric testing machine. Testing to 5,000 lbs. and elongation of 800%.



Tuber used in forming slugs prior to cure. After cutting to correct length they are conveyed to Weighing Dept. by bucket elevators.

After curing, each Bettis Protector is tested for external and internal diameter.

Bettis Protectors - *The genuine anti-friction Rubbers*

CO-OPERATION

with the OIL INDUSTRY since its infancy

In the early days of the Mid-Continent Field the oil business was considered by bankers as entirely speculative. Such an attitude brought about the organization of The Exchange National Bank of Tulsa by a group of men who visioned oil as a basic industry possible of operation on a scientific and business like basis.

On those principles The Exchange National Bank had its foundation and it has been the strong financial guardian of the oil business ever since.

No matter of credit rating within the oil fields is beyond the scope of this institution Its personnel is composed not only of financiers, but of men who are practical oil operators themselves, capable of weighing the problems of the industry in the balance of their own personal experience. Companies, properties and production are matters of every-day knowledge to this organization. Any matter in petroleum finance requiring experienced advice is well trusted to The Exchange Banks of Tulsa.

Capital, Surplus and Undivided Profits Exceed $5,000,000
Resources Exceed $64,000,000

CREDIT SENTRY OF THE OIL FIELDS

EXCHANGE BANKS OF TULSA
The Exchange National Bank — The Exchange Trust Company

TULSA
Oil Capital of the World

We have regular correspondence with customers of The Exchange Banks of Tulsa, in Buenos Aires

IDEAL-AJAX
ROLLER BEARING TWIN ENGINE

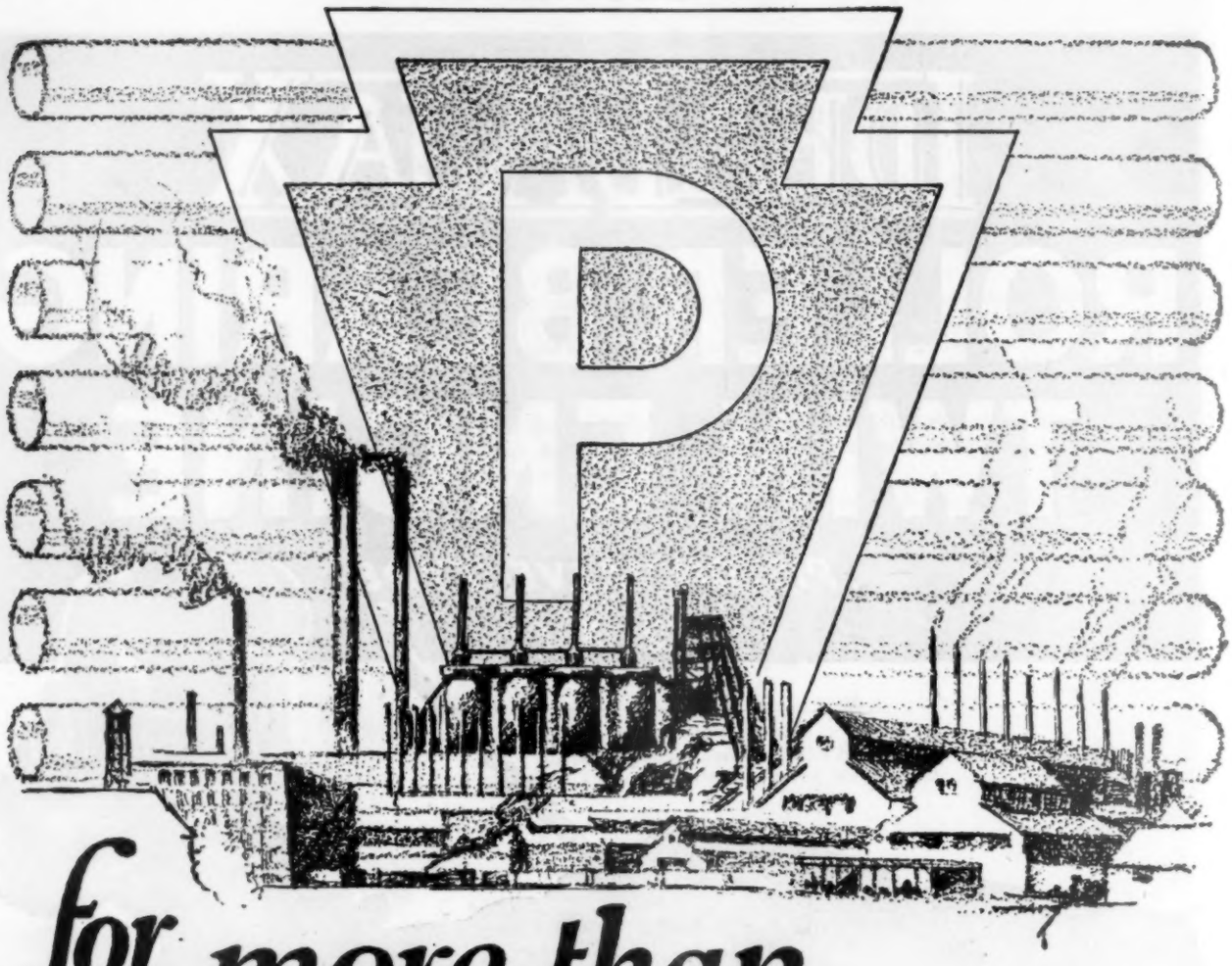
PISTON VALVE TYPE
12 X 12

NSCO
TRADE MARK

DESCRIPTIVE BULLETIN
No. 48
SENT ON REQUEST

THE NATIONAL SUPPLY COMPANIES

Say you saw it in The OIL WEEKLY



for more than 25 YEARS..

Perfection and Pittsburgh Seamless have stood for One and the Same Thing . . . .

More than a quarter century devoted to the development and exclusive manufacture of seamless steel pipe and tubing—control of facilities covering every step in the manufacturing process, from raw material to finished product—a never tiring effort to produce a better and still better Pittsburgh Seamless—these are the factors which have enabled this, the oldest and largest concern manufacturing "seamless" exclusively, to produce seamless steel tubular products of outstanding superiority.

From Ore to Finished Pipe or Tube —Pittsburgh Seamless is the product of one Company's Resources and Skill . . . .

Pittsburgh Steel Products Co.

DIVISION OF Pittsburgh Steel Co.

Pittsburgh New York Houston Chicago St. Louis Detroit Tulsa

Pittsburgh Seamless

Largest Manufacturers of Seamless Steel Pipe and Tubing Exclusively

2901

STRENGTH RELIABILITY INCREASED PRODUCTION

THROUGH the use of sterling materials, Layne has, for a quarter century, supplied the oil industry with a screen known the world over for its three major factors—strength, reliability and increased production.

But that distinction was not enough for Layne. Greater increase in production was a vital issue to be ironed out and mastered. Therefore, Layne strove to give the oil industry something new and exclusive, and, through inherent ingenuity, created a simple design, which greatly increases production over the old type screen. It is called the Milled Groove screen.

Its introduction was spectacular, for this screen was immediately accepted.

Those who have installed Milled Groove have decreased cost and increased production. Get in line with them—install now instead of later.

Note number of Keystone shaped wires passing over each groove.

Note greatly enlarged inflow area.

Phone, write or wire for quick service or any further information.

The Layne New York Company
30 Church St., New York

The Layne & Bowler Corp.,
Los Angeles, Calif.

Vickers, Limited
London, England

The Layne & Bowler Co.
Houston THE LAYNE **Texas**
Increases Production

LEADERSHIP IN SCREEN MANUFACTURE FOR A QUARTER CENTURY

Say you saw it in The OIL WEEKLY

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices

PITTSBURGH, PA.

District Sales Offices

New York Boston Philadelphia Louisville Atlanta Houston New Orleans

Ocean Terminals

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Providence, R. I.
New York Harbor (Bayonne, N. J.)
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Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

Say you saw it in The OIL WEEKLY

Figure the Cost!

The valves you put into your line are either with you or against you. They either speed up operations or eat up profits. Many an operator is on the wrong side of the ledger because he has failed to take into account the differences in valves.

Consider the strength of Darval Semi-Steel valves. Examine their construction and note how simply and soundly they have been designed to guard against wear, binding, bending, or breaking.

They are bronze mounted with renewable bronze seat rings. Also furnished with solid semi-steel seats. Either bronze or steel stem provided. Made in all sizes and for all pressures.

Write for further description.

DARLING VALVE & MANUFACTURING COMPANY
WILLIAMSPORT, PA.

New York Chicago Oklahoma City Houston

Mid-Continent Distributors:
Frick-Reid Supply Corp. Atlas Supply Co.
International Supply Co. Petroleum Supply Co.
Happy Belting Co.

California Distributor:
Petroleum Equipment Company, Los Angeles

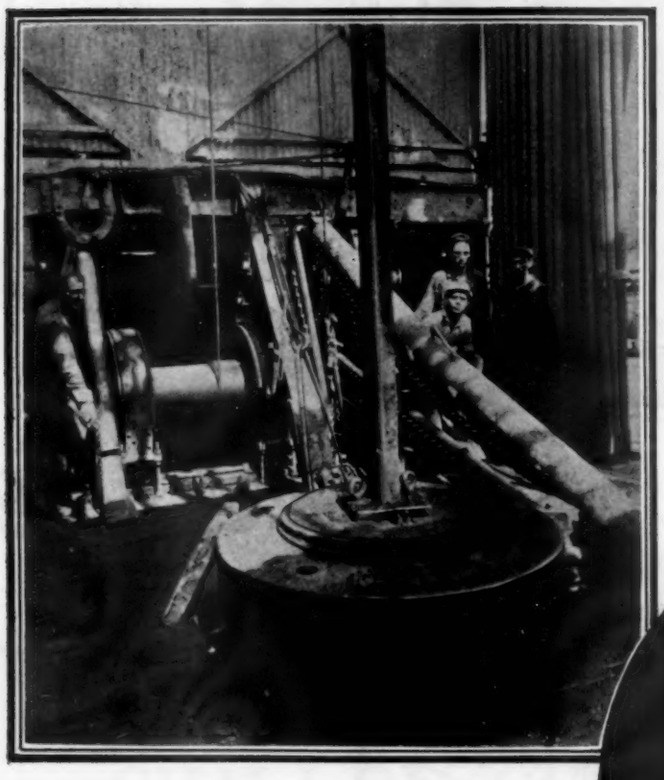
DARLING
GATE VALVES

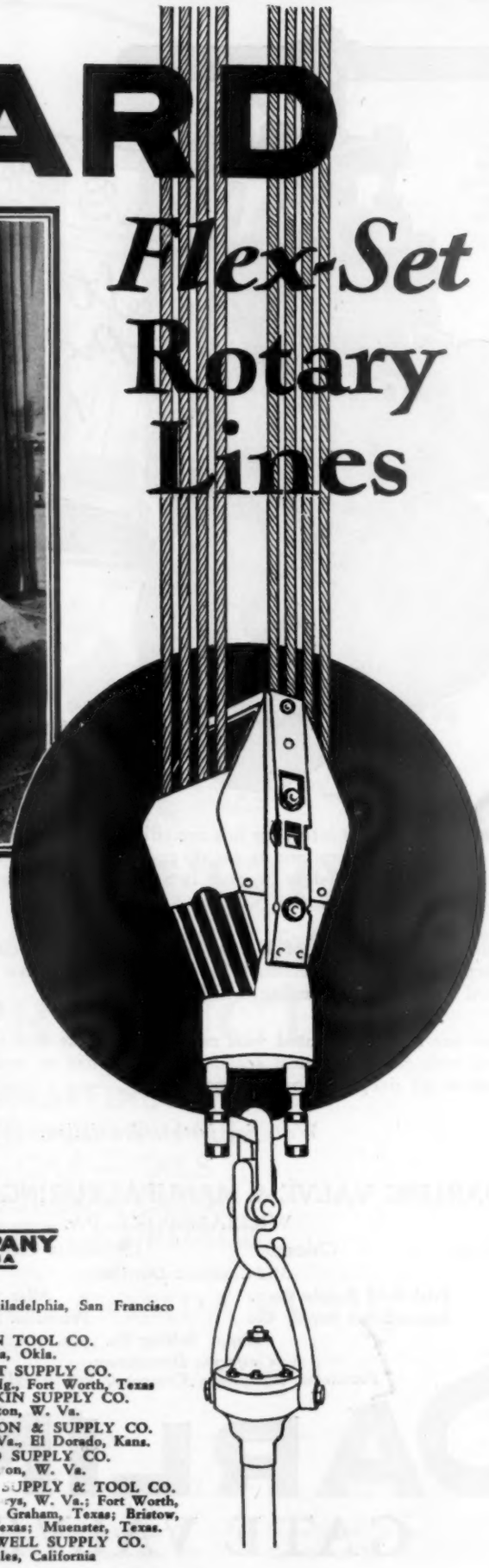
Darling Forged Steel Gate Valve for extra high pressures and other hazardous conditions.

Say you saw it in The OIL WEEKLY

HAZARD

Flex-Set Rotary Lines





Pre-formed Wire Line of *Dependable Hazard Quality*

PRE-FORMED rotary drilling lines — built by Hazard — with with extra strength and flexibility to withstand constant bends without injury, are cutting rope costs on many rotary operations.

Let us send you complete information on the advantages of "Flex-Set," and other Hazard Wire lines for oil country usage.

Complete stocks carried at branches and distributors listed.

Hazard Wire Line for every service

Drilling Lines
Flex-Set Pre-formed Rotary lines
Casing Lines
Sucker Rod Lines
Sand and Mandrel Lines
Wire Strand

HAZARD WIRE ROPE COMPANY
WILKES-BARRE PENNSYLVANIA

1623 Troost Ave., TULSA, OKLA.
New York, Chicago, Pittsburgh, Denver, Los Angeles, Birmingham, Philadelphia, San Francisco

Distributors:

BOVAIRD SUPPLY CO.
904 Mid-Continent Bldg., Tulsa, Okla.
BRADFORD SUPPLY CO.
Bradford, Pa.
CAMERON TOOL & SUPPLY CO.
Cameron, W. Va.
CROTTY & CO.
Parkersburg, W. Va.
DANSER SUPPLY CO.
Weston, W. Va.
FORT WORTH WELL MACHINERY & SUPPLY CO.
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GREAT NORTHERN TOOL AND SUPPLY CO.
Billings, Mont.
IVERSON TOOL CO.
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LONGHART SUPPLY CO.
619 Petroleum Bldg., Fort Worth, Texas
THE McJUNKIN SUPPLY CO.
Charleston, W. Va.
MOUNTAIN IRON & SUPPLY CO.
Parkersburg, W. Va., El Dorado, Kans.
PRICHARD SUPPLY CO.
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THE PRODUCERS SUPPLY & TOOL CO.
Marietta, Ohio; St. Marys, W. Va.; Fort Worth, Texas; Olney, Texas; Graham, Texas; Bristow, Okla.; Coleman, Texas; Muenster, Texas.
UNITED OIL WELL SUPPLY CO.
Los Angeles, California

Say you saw it in The OIL WEEKLY

WE wish to express our appreciation to all those who have devoted their time and energy for their unceasing efforts towards the improvement, perfection and standardization of methods and appliances used in the Natural Gas industry.

Houston Gulf Gas Company
Houston Gas & Fuel Company

Dixie Gulf Gas Company
Dixie Gas & Fuel Company

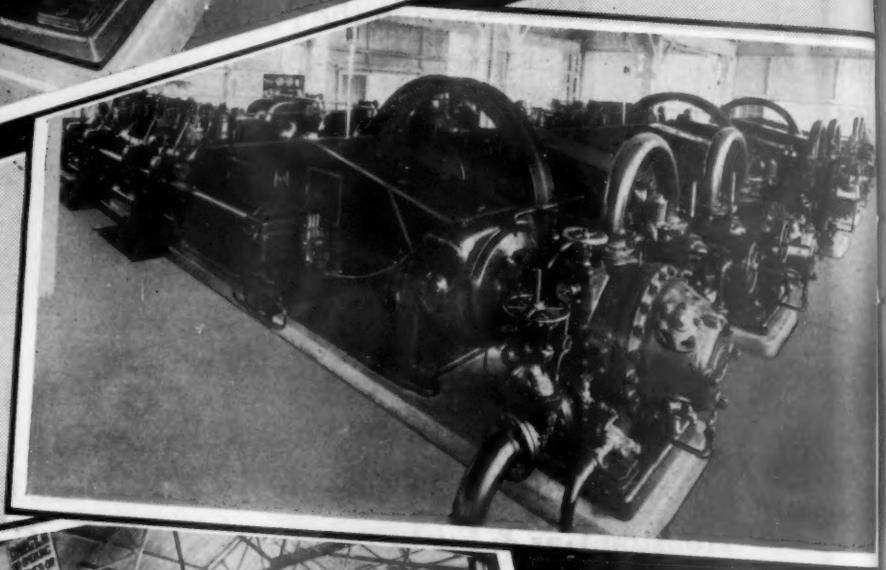
SUBSIDIARIES OF

·UNITED GAS COMPANY·

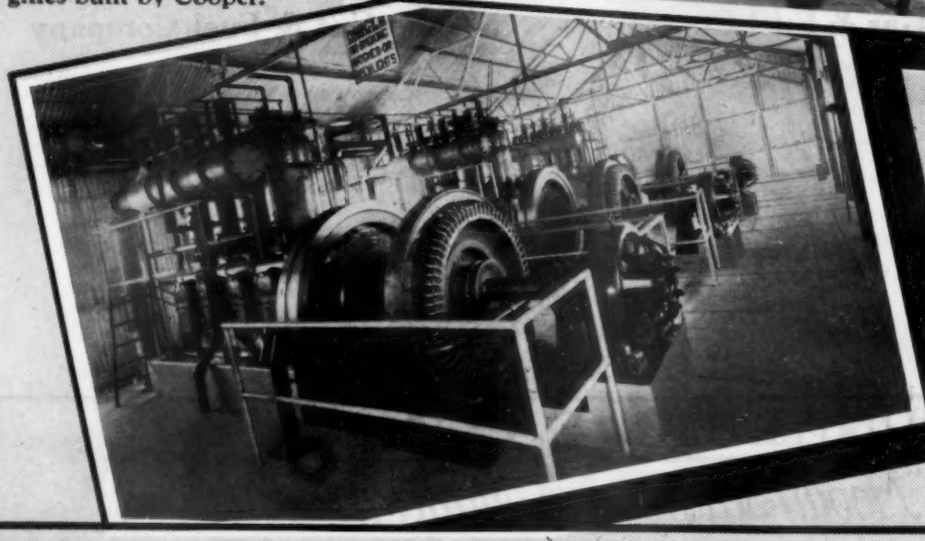
"Moody-Seagraves Management"

Cooper's For Every Ga

The Cooper twin tandem 1000 H. P. and single tandem 500 H. P. engines have become standard sizes for main line gas compressor stations. Photograph shows one of the largest gas compressor stations built during 1928.



Some gas men prefer a medium size engine for main line stations and the larger booster stations on account of ease in hauling and erecting. The Cooper Type-19 single tandem 380 H. P. and twin tandem 760 H. P. is one of the best engines built by Cooper.



Hope Vertical Gas Engines are built by Cooper for compressor station auxiliary service and for every power purpose in standard sizes from 50 to 540 B. H. P.

Say you saw it in The OIL WEEKLY

Gas Pumping Problem

For small booster stations or for delivering small quantities of low pressure gas into higher pressure lines the Cooper Type-16—50 H. P. is best suited. It is built for low-cost and hard service with a minimum of attention.

For gas booster stations and the smaller main line stations the Cooper Type-80—170 H. P. gas engine retains its position of leadership. The photograph shows a station of sixteen units in Texas.

Coopers for Every Gas Pumping Problem

FOR main line compressor stations; booster stations; gathering stations and auxiliary power, there is now a Cooper gas engine exactly fitted to every one of them.

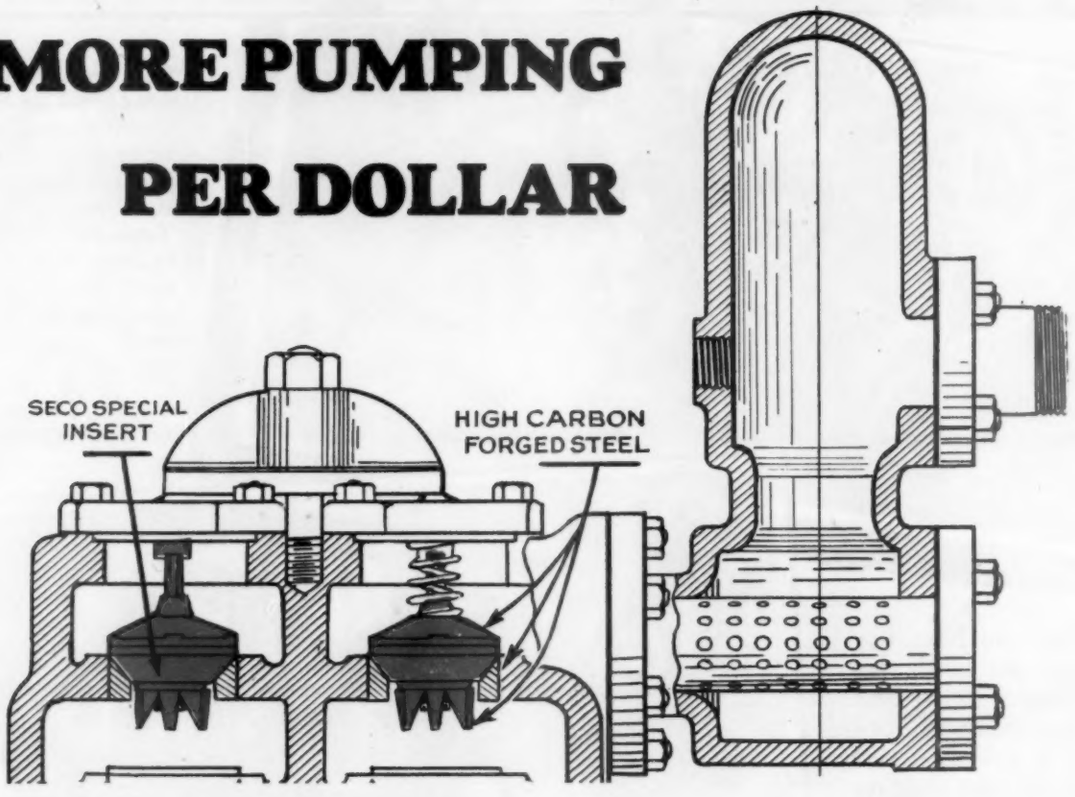
Backed by an engine building experience that reaches back 96 years and guided by forward looking policies destined to perpetuate the name of Cooper as a leader in machinery building, for untold future generations—you will always be safe in choosing Cooper engines.

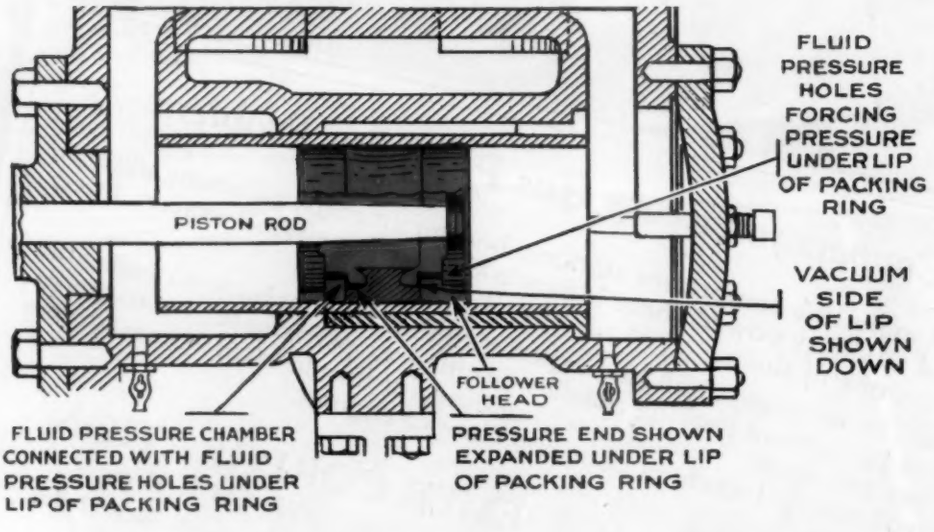
THE COOPER-BESSEMER CORPORATION

MOUNT VERNON, OHIO — GROVE CITY, PA.

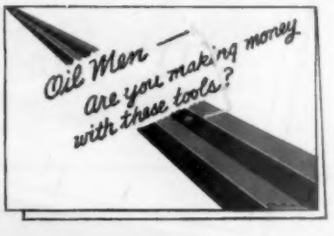
1116 Magnolia Bldg., Dallas — 630 E. 61st Street, Los Angeles — 615 Kennedy Bldg., Tulsa

SECO VALVES + KIBELE PISTONS = MORE PUMPING PER DOLLAR




FLUID PRESSURE HOLES FORCING PRESSURE UNDER LIP OF PACKING RING
PISTON ROD
VACUUM SIDE OF LIP SHOWN DOWN
FOLLOWER HEAD
FLUID PRESSURE CHAMBER CONNECTED WITH FLUID PRESSURE HOLES UNDER LIP OF PACKING RING
PRESSURE END SHOWN EXPANDED UNDER LIP OF PACKING RING

Send for this FREE illustrated folder of all Mission Tools. You can save money by reading it. Write for your copy today.

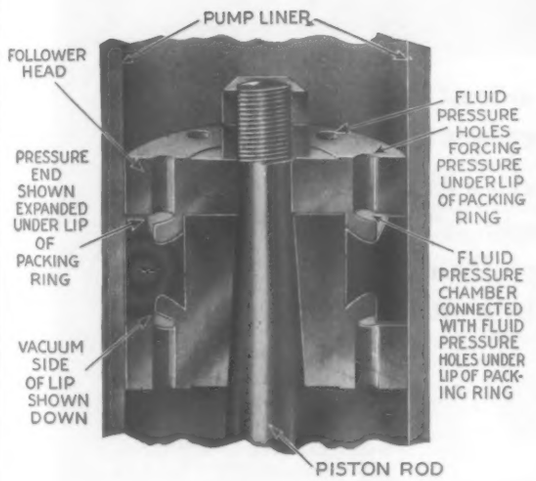


SECO Valves

The Seco Straight-Shot Valve is made for all makes and sizes of pumps. It is particularly adapted to slush, hot and cold water, gasoline and hot oil up to 300 degrees. All parts are made of high carbon, forged steel except the inserts which are of a special make and used exclusively in Seco Valves. They have shown in numerous instances to give 100% more service than any insert ever used. The forged steel used prevents gritty fluids from eating into metal as it does with cast parts.

[See pages 214 and 215 in the Composite Catalog of Oil Field and Pipe Line Equipment.]

A Pump Is As Good As Its Valves and Pistons


PUMP LINER
FOLLOWER HEAD
PRESSURE END SHOWN EXPANDED UNDER LIP OF PACKING RING
VACUUM SIDE OF LIP SHOWN DOWN
FLUID PRESSURE HOLES FORCING PRESSURE UNDER LIP OF PACKING RING
FLUID PRESSURE CHAMBER CONNECTED WITH FLUID PRESSURE HOLES UNDER LIP OF PACKING RING
PISTON ROD

KIBELE Pistons

The Kibele self expanding and frictionless piston is made for rotary drilling slush pumps, mine pumps, boiler feed and oil pumps. It is made to fit any pump and no special rod is required. The working parts of the piston are shown such as the Piston Head, follower head, packing ring, vacuum side of lip down, fluid pressure holes forcing pressure under lip of packing ring and fluid pressure chamber connected with fluid pressure holes under lip of packing ring. The rubber is compounded to our own specifications. Pistons are of exceptionally close gray iron with outer surfaces chilled.

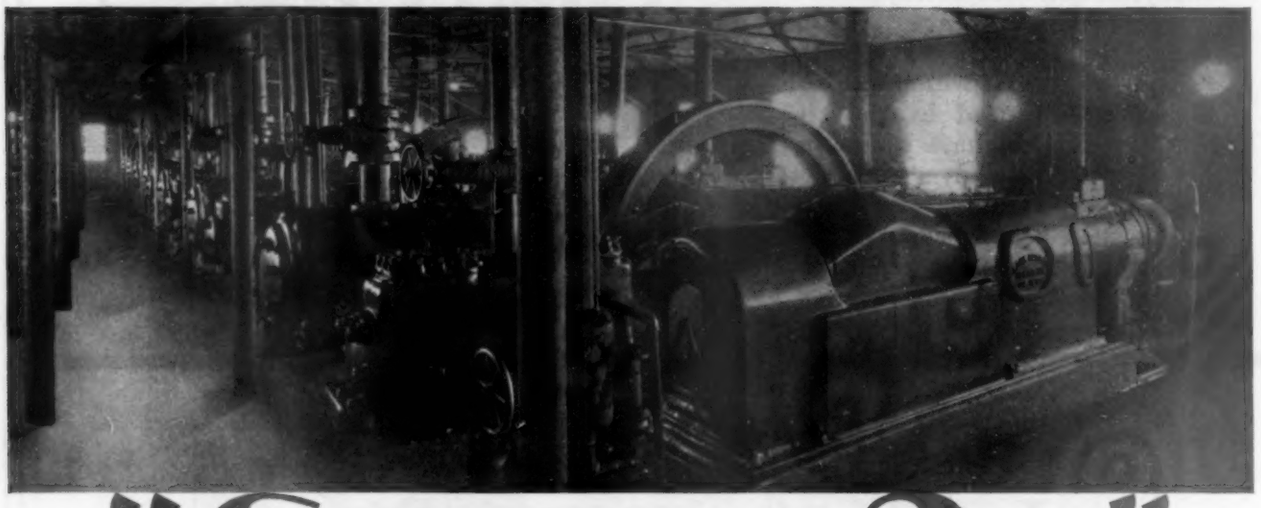
MISSION

Sales Company, Inc.,

Esperson Bldg.

HOUSTON

trouble-free



"Super 2s"

CLARK "Super 2s" are outstanding among 2-cycle compressors for trouble-free performance over long periods of time. When you see engines that have to be worked on all the time you can be sure they are not CLARK "Super 2s."

In addition to maintenance economy, the "Super 2" design saves one-third of the gas required by ordinary 2-cycle engines, at least equalling the efficiency of the very best of the 4-cycle machines.

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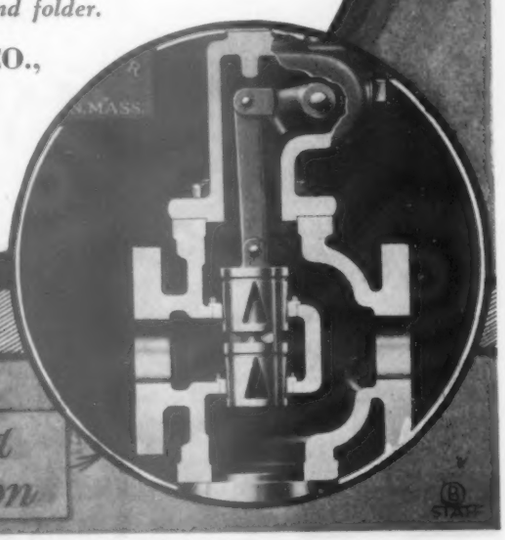

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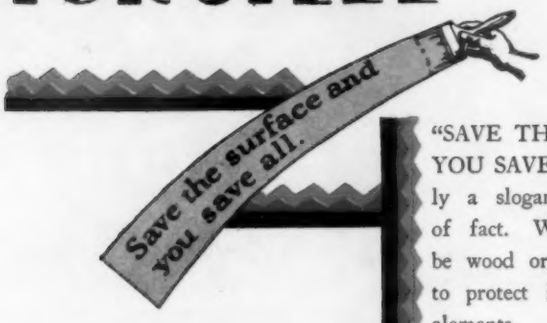

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ROTARY FISHING *And* FISHING TOOLS

By HARRY PENNINGTON
Mechanical Engineer

THE accompanying paper treats of fishing, but it should not be forgotten that prevention is always better than cure.

The good fisherman combines talent and ingenuity; talent to persist in learning to fish and ingenuity in producing from somewhere the proper tool for the job, and quickly. Perhaps there are no two fishing jobs alike, but the great range of tools available, in standard as well as specialty designs, is such that a tool, or the design of a tool can be found or made to suit any kind of fishing job.

Making and furnishing fishing tools is quite a thing apart from running the tools in the hole; the organization is fortunate that has a shop superintendent available to whom a fishing job can be described, who will in a few hours, turn out a tool that will bring the fish out, either making it, modifying an existing tool or securing a new one.

THE causes and kinds of fishing jobs are numerous; it may be well to divide the causes, as well as the kinds and the tools.

Operation. Improper drilling methods, such as running the mud too thin, causing caving; spudding too heavily, damaging the pipe; running the pipe at a whipping speed, either too high or too low; running a bent joint; twisting too hard due to too much weight being let down; hard drilling, particularly in boulders, where the bit takes hold and lets go, as well as in gumbo that balls the bit.

Drill pipe too small for the bit diameter, such as four-inch in 11- or 15-inch hole, or six-inch in 24-inch hole allows the pipe to kink and weaken, and requires too much torsion for the size of pipe, compared with the bit diameter.

Low water in boilers is another hazard.

Set Up. A good set up allows a rig to run more continuously. A sunken derrick or engine foundation may shut the rig down at an inopportune time. Bracing of draw works and engine, as well as bolting down; bearing alignment, and many other details of set up may be good, with no trouble, or may be poor, with much trouble.

A wooden derrick, insecurely built or guyed, may blow down in a windstorm and stick the pipe in the hole.

Administration. Failure in water or fuel supply and poor quality of either may shut a rig down with the pipe in the hole. Such things as packing, sharp bits, rock bit renewals, spare parts, that are not promptly furnished may cause risky delay. Waiting for orders is another source of hole trouble; to take a core, send it in today, and wait until day after tomorrow, with the hole standing, waiting for directions, sets up delay that places no regard for delay in the minds of the field. A hole may get in bad condition unless the pipe is in it rotating with the pump going.

Incorrect Equipment Design. Included in this are slips that can pass through the ring; clutches that can get together and twist either the line shaft or drum shaft; fractured drum flanges due to lack of provision for expansion from heat generated by brakes; poor design of engine links and rods of the valve mechanism, accentuated by lack of lubrication either from lack of attention, or wet steam; badly balanced engine.

Maintenance. Under this class of cause is loose brakes caused by wear, allowing the pipe to slip and strike a collar; dull slips that fail to hold; worn clutches that will not stay in engagement; worn out chain; worn sprockets that let the chain run off; loose chain; adjustment of the hold down of rotary table which may let the table teeth jump and ride the pinion, breaking one or the other—usually the table teeth; unsafe wire rope; lack of lubrication of crown block; bolts of all kinds coming loose; broken steam pipe due to lack of provision for expression; swivel bearings; draw works bearings; turbine-generator failure at night.

Parts Dropped in Hole.—Accidental dropping of anything in the hole forms a large number of fishing jobs. Unskilled helpers, haste, lack of care, a plugged bit showering mud over the tools and making them slippery come under this heading.

Defective Equipment.—Defects in equipment, either above or below ground add to the list of causes, such as a badly made swedge joining two sizes of pipe, a fish tail bit broken off due to brittleness, or spudding to see whether the formation is gumbo or rock, a split drill collar caused from a forging strain or a seam in the steel used for making it, split tool joints and pipe couplings.

Brittle drill pipe, pipe with spiral wall ribs inside or straight ribs that weaken it, poor threads, may cause an accident.

The only kind of fishing job of which the writer knows that cannot be eliminated is frozen pipe caused by striking a cavity and allowing the well to cave or

boulders to fall in on top of the bit, particularly a large shank bit such as a rock bit. Otherwise, rigid adherence to safe drilling practice, rigid requirements as to quality of all steels used below ground, rigid standards of maintenance will largely prevent fishing jobs.

Fishing Is Expensive

There is no money in fishing. It is expensive to the drilling contractor as well as the operator, and since almost every kind of fishing job is avoidable, why should we take the risks that we know have led to fishing, with all kinds of expense, delay as well as lost flush production.

Inadequate administration, antiquated equipment, lax maintenance, hard running, inexperience anywhere down the line, haste, assumption of unnecessary risk, unfamiliarity with territory, and a lot of other things might be listed on one side of the ledger as experience gained, against the cash spent on the other side for fishing and fishing tools.

The operator is concerned with fishing for he, too, pays his part of the direct cost by furnishing fuel and water and by administration, and the whole of the indirect cost, consisting of lost production, is borne by the operator.

While all of us try to get fast hole made, still it is not always the cheapest hole by any means, nor the most profitable. The percentage of holes lost at Seminole, for instance, was larger than usual; the causes were many and the writer again asserts that these fishing jobs and skidding over, with the exception of cavities, were avoidable for the greater part.

The prevention of fishing jobs, in a majority of cases, is a matter of skill in making wells, as well as care in selection of tools and equipment, followed by maintenance of the same in such shape that breakdown is unlikely, for fishing jobs are usually a combination of circumstances.

A drilling rig need not be the heaviest and largest, for safety, for size alone is not an assurance, but quality always is, when we seek reliability.

Design of tools and equipment has much to do with safe drilling, as well as the quality of tools. For instance, a rotary with a table stake lifted by the slip ring, may drop the stake in the hole, or an improperly made slip may fall through the ring.

The most frequent fishing job being that of twisted off drill pipe, care of drill pipe is a matter that of necessity should be understood. If drill pipe is neve stressed beyond its elastic limit, it re tains its strength over long periods, pa ticularly heat treated pipe. Hard drilli g makes it rough going for drill pipe, to be sure, when the going is made hard by rough drilling. Taking an average list of drillers, 28 in number, and checking the usage of drill pipe by each one, the writer found that about half would use drill pipe as it should be used, while the other half always had rough work going on, but the average hole made per shift for the whole number varied but little at the time. If pipe snaps off the driller running it at that time may not have used the pipe up to such load as would cause twist off; previous hard use, stressing pipe beyond its elastic limit, making it take a permanent set, weakening it materially, more than likely is the real cause of twist off in a majority of cases, as shown by examination of twisted off pipe in a large number of failures of the pipe. The harder formations, of course, are more apt to damage pipe and cause twist off than soft formations, for the twist required to turn pipe in soft formations, like shales, clays, gumbo, is less than in boulders, soft sand rock and the like.

In hard formations, or in drilling where the pipe is subjected to hard usage by twisting, if pipe is "crystallized," or fatigue is set up by over stressing, the stress is in torsion, and when overstressed, the pipe will take a permanent set in its twisted condition, preventing it from springing back into its original shape. When this can be detected by the eye, the joint should be discarded for further use as drill pipe, of course, but all permanent twist cannot be observed with the eye.

The writer has marked pipe, immediately at the end of the thread, where it screws into the tool joint of drill pipe coupling, at both ends, with the marks in line, and found that many joints in the same string had from one-eighth to one and one-half turns permanently set, in the direction of twist in drilling. It is possible in this manner to distinguish between the good and bad joints of a string that is giving trouble, if the pipe is so marked when new, and at the time twist-off comes too frequently, the whole string need not be discarded, but only the joints that have been given too great a permanent set, saving the balance of the string, because, until deformed, the balance of the string is good. In one string, the pipe wore the wall down to 64 per cent. of its original thickness, in rubbing the wall while drilling, yet the string was still safe, for the deformed joints had been replaced as fast as deformed, and all remaining joints were good.

Weight on top of the bit is only an approximation of the duty being imposed on the pipe; in some formations, a weight of 5000 pounds on the bit may set up more duty for the pipe to do than 30,000 pounds in another formation. A balled up bit, for instance, will stress pipe beyond its elastic limit due to the bit sticking and letting go, and appearing as if it were drilling in rock. Boulders are a source of pipe trouble in that the letting go of the bit starts the engine and rotary faster, when the rotary table then runs against the bit when it stops again. The writer is sure that sticking of the bit is the greater source of pipe stress beyond its capacity.

Direct placing of responsibility for fishing jobs is a matter admitting no compromise. For instance, if one driller runs a bit, say a fish tail, down to a diamond point, and the next driller coming on, twists off while reaming, there is no doubt that the primary cause is responsible, because we know that reaming with a fish tail is always dangerous, in fact, reaming with any kind of bit is accompanied by danger, and when a bit is worn badly out of gauge, reaming becomes necessary.

Also, there should be no compromise with the truth. In justice to his employer, the exact reason for twist off or other accident should be given without fear of censure.

The longer a fish sets, the more difficult the fishing job. In all territory, cuttings begin to settle in the hole immediately circulation stops and since cuttings will freeze pipe, particularly if sand is present, the first hour or so is the most important in all fishing operations in rotary work.

On the Gulf Coast, in the deeper holes, even a few minutes of stopped circulation, or rotation in the hole, with the pipe in it, may freeze the pipe, so that in fishing, the hazard is greatest immediately pipe twists off.

This is so important that in one district, the hole is not started until the overshot is setting in the derrick corner, ready to go.

Also, after setting a time, mud settles out, the thicker portion going toward bottom, leaving the upper mud thin which may cause the hole to cave, or allow boulders to fall in, further intensifying the difficulties of fishing.

Therefore, fishing tools, of necessity, must be immediately available, even though their use may be required only once annually.

A prolonged fishing job is expensive to a drilling contractor in fishing tool costs, pay rolls, maintenance and fixed charges; at the same time, the well owner has the expense usually of fuel, water, administration or fixed charges, as well as loss of flush production in a flush field. For assistance in fishing, one larger operator maintains a fairly complete set of fishing tools that are of frequent use to the drilling contractor. The tools are maintained at the expense of the user, and are always placed in shape after being returned, at the user's expense.

It is seldom that a drilling contractor with one or two drilling rigs can keep a set of fishing tools complete enough for any emergency, and the set maintained by this operator has proven its value by reducing fishing costs of the well owner.

Borrowing fishing tools is a current practice. While a rig may have as a regular part of equipment, an overshot of two types, one for catching a collar up and another for catching plain end pipe up, a let go spear of some kind, a taper tap, and a wall hook, there are other special tools that the rig may need, and a driller always remembers who has such tools, and also he remembers that the owner of such tools will invariably lend the tools.

Yet, when the tools are out, the owner may himself have a fishing job that, if the tool were run promptly, would perhaps reduce his fishing cost. The writer has searched for days, looking for a loaned tool, with a rig shut down waiting for it; the borrower used it on his well, then loaned it to another rig, and in turn, another rig used it, until in the search,

(Continued on page 102)

Acid Bottle Method *Of* Surveying Holes

Tool for making the test is simple but calculating what it shows presents some complications

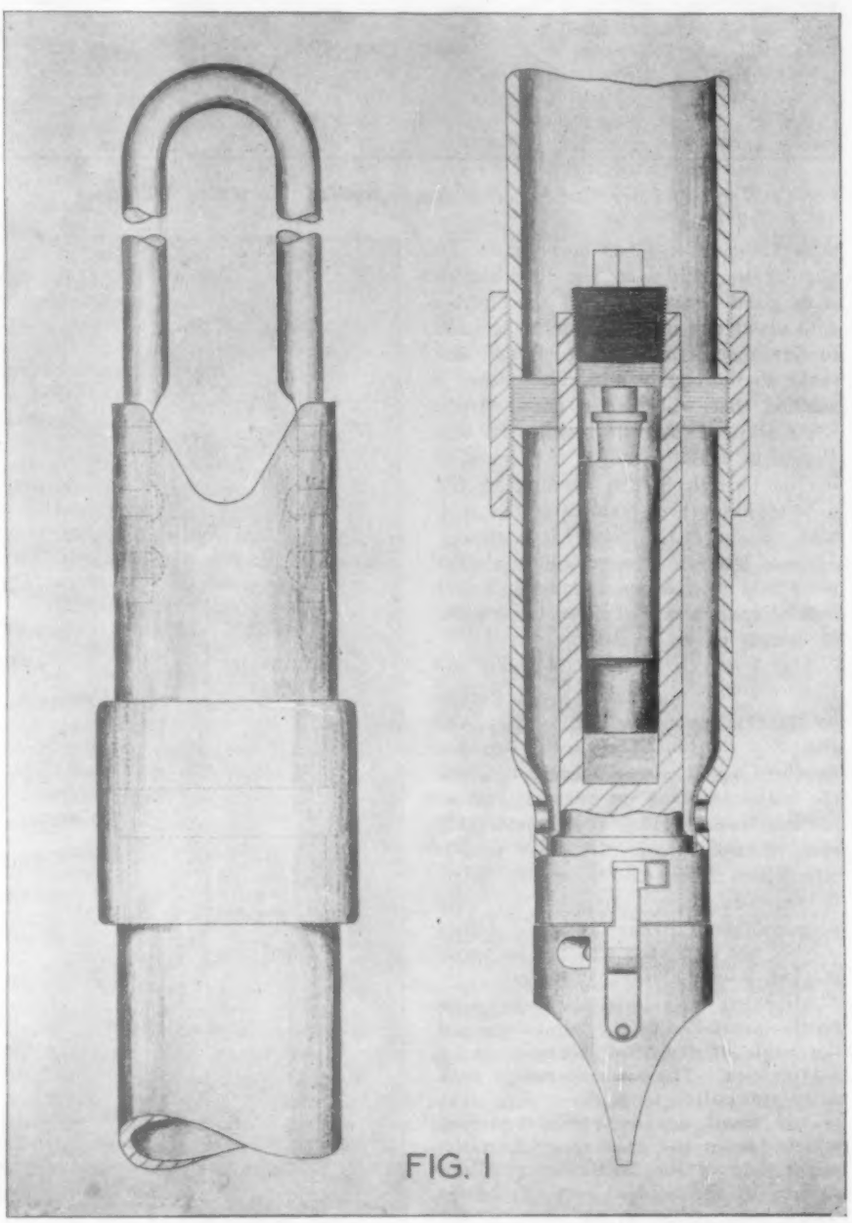
By Hu M. HARRIS

HUMBLE Oil & Refining Company has been giving the subject of crooked drill holes much study and I am submitting a description of the tool and system as used by that company for measuring the deflection of oil wells by the acid bottle method.

The tool for making this test is a very simple one and can be made in most any field shop, and is very clearly shown in Figure 1. In making this tool a three-inch Larkin bit type sand pump bottom is used on account of its quick acting latch device which enables the bottles to be quickly changed. This bottom is fitted to a three-inch to four-inch swedge nipple. The nipple in turn being fitted by means of a sleeve or a swedge to the lower end of any size casing that may be desired to be run in the hole. For holding the bottle a piece of steel 2¾ inches in diameter and 12 inches long is bored out so that the bottle will fit in it snugly. The bottle container is then fitted to the sand pump bottom and the two parts welded together.

The bottle is sealed in the steel container by means of a two-inch brass plug having fine threads so that it will be tight and thus avoid a leak which would cause the bottle to break. Care must be taken in making this tool to see that the bottle container is vertical in the swedge nipple. The tool is generally attached to a length of 20 foot casing and a bailer top is attached to the other end whereby it may be lowered into the hole by means of a sand line.

The bottles used for the acid solution are four-ounce oil sample bottles and are about 1½ inches outside diameter and 6½ inches high. The acid used is a 52 per cent. solution of hydro-fluoric acid and comes in waxed bottles, costing about $1.00 per pound. Precaution should be used in handling the acid because it will cause serious burns if allowed to get on the flesh. Rubber gloves should be used in handling the acid and the bottles, also the operation of putting the acid in the bottles should be in the open as the fumes are poisonous. It is advisable to stand so that any breeze will conduct the fumes away from the operator. A bucket containing a soda solution made from common baking soda should be at hand in case any of the acid should get on the operator's hands as this is an antidote and will prevent injury. The soda water is also used in rising out the bottles



Tool used in making acid bottle test

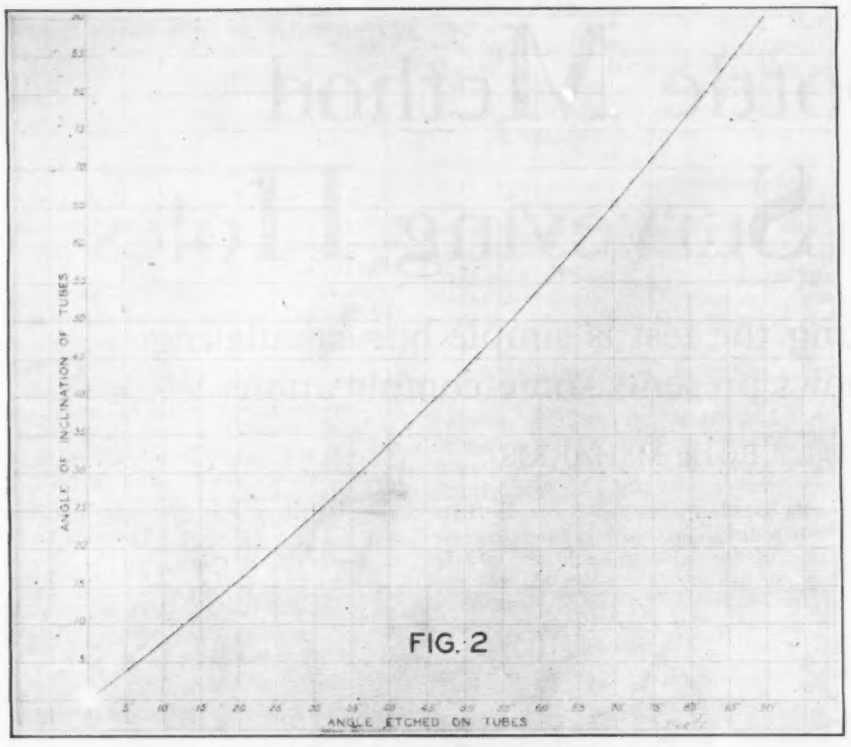


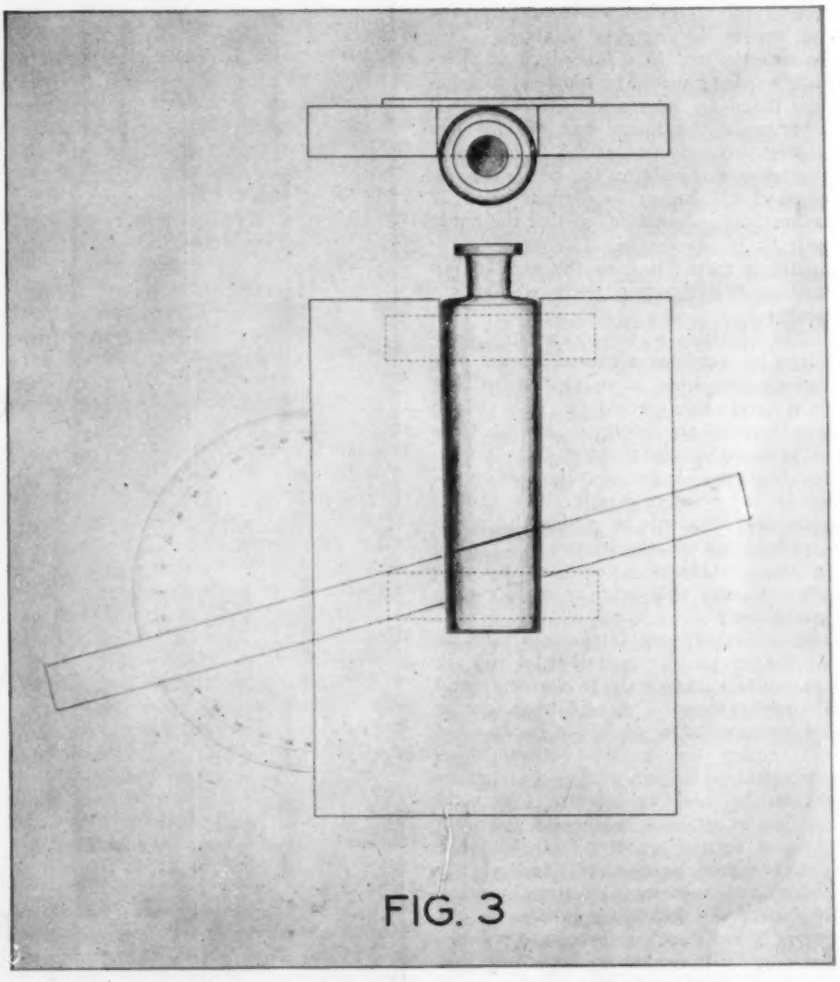
Table of correction for error due to capillarity in testing drill holes

varies with the angle of inclination, also the diameter of the bottle and the strength of the acid, being maximum when the bottle is inclined 45 degree. To get the correct angle, a curve of capillary action is plotted—such curve as illustrated in Figure 2. This curve may be plotted by laying off known angles, filling the bottles with liquid and inclining same to the angles as outlined by the surface of the liquid and measuring the actual angle of inclination of the bottle. The angle of the inclination of the hole is always greater than the angle etched on the bottle. A simple method for measuring the angle etched on the bottle is to insert the bottle into a slot that has been cut in a three-quarter-inch board so that the bottle fits snug, the board being squared with the center line of the slot. The bottle is then revolved in this slot and the high and low points of the angle are marked on the respective sides. The angle can then be measured by means of a protractor (see Figure 3). After all the bottles are measured and their true angle of deflection is noted on the label, the deviation from the vertical line of the well may be plotted, also the true depth of the well may be calculated.

after the acid test has been made. In putting the acid into the test bottles it is good practice to fill the bottles with about one inch of water; then add to this about one-half-inch of acid and shake to thoroughly mix. This makes a solution that will give a good etching when allowed to set 15 minutes. A test should be made with the tool hanging in the derrick before running in the hole to judge the strength of the acid, also to check the tool for accuracy. It is a laboratory practice to always pour acid into water and never water into acid, as heat is generated and there is danger of an explosion.

The strength of the acid and the time for etching are best determined by an experiment on the location and the acid is diluted according to the depth of a hole, the aim being to allow the bottle to reach the desired location for measuring before any considerable etching takes place. After the tool is withdrawn from the hole, the bottle is removed from container, the acid solution poured out and the bottle washed out with soda water. The bottle is then labelled as to the depth.

After the survey is completed, the bottles are taken to the laboratory and the angle of deviation is measured by a protractor. The angle measured indicates a deviation from the vertical that is too small due to capillary action which causes the acid to rise on the upper side of the bottle, so that the surface of the acid at rest in the inclined bottle when in the hole is not horizontal. The amount of this error



Showing how angle of mark on bottle is taken with protractor

Paper Read Before A. S. C. E., Dallas, April 24-25, 1929

Modern Methods *of* Deep Well Drilling

By W. W. SCOTT
Petroleum Engineer, Humble Oil & Refining Company

THIS discussion is confined to drilling in the Southwest, which includes the states of Arkansas, Kansas, Louisiana, Oklahoma and Texas. These states are important from the standpoint of production and, at present, accounts for approximately 60 per cent. of the oil produced in the United States. The same drilling methods are used as in all parts of the country.

The mention of modern methods of oil well drilling immediately brings to mind improvements and changes in methods and equipment. Most of these have been developed to meet the need of drilling to great depths. Only a few years ago an oil well 4500 feet in depth was considered a deep well but due to recent drilling developments, the completion of producing wells more than 6000 feet deep is a common occurrence. Only recently the Texon Oil and Land Company, at Big Lake in West Texas, completed the deepest producing well in the world at a depth of 8525 feet. As a matter of fact, the ability to drill wells to these depths in comparatively short periods of time, has been one of the outstanding accomplishments of the oil industry.

In looking back over the past few years many changes and improvements have been made in methods of drilling wells. It will be interesting to review some of the changes that have taken place. There are two methods used in drilling oil wells and they are commonly referred to as the cable tool method and the rotary method. Improvements and methods of operation of rotary drilling equipment have practically eliminated cable tools in many fields and, in fact, when discussing modern methods of drilling, one is compelled to consider principally the rotary method.

Equipment

Derricks. Within the past few years there has been a complete transition from the use of wooden to steel derricks. Most derricks for use in rotary drilling are 122 feet high and are made either of tubular or angle iron. The design of derricks is along lines of good engineering practice and present derricks are of sufficient strength to withstand the loads necessary to drill to depths of 8000 feet or 9000 feet. The following tabulation will give an idea of the loads derricks must handle while drilling a well of ordinary depth.

Kind of pipe	Size inches	Wgt. per ft.	Length feet	Total Wgt. Lbs.
Drill pipe	6⅝	22.2	4000	88,800
Drill pipe	5-9/16	19.0	5000	95,000
Drill pipe	4½	16.6	5000	83,000
Casing	8⅝	36.0	4000	144,000
Casing	7	26.0	5000	130,000

Modern derricks for deep well work are built to withstand loads as high as 1,000,000 pounds.

Casing and Drill Pipe. Seamless steel casing and drill pipe are now in common use throughout the industry and their development has been a factor in drilling and successfully completing wells at great depths. Some manufacturers are making products which will aid in drilling wells to greater depths. One manufacturer is making heat-treated drill pipe which is giving excellent service. Another manufacturer is placing on the market an alloy drill pipe. In addition to this, special pipe is being made for the purpose of properly casing wells which are completed at great depths. For this purpose alloy steel is used and the wall of the pipe is of sufficient thickness to withstand the collapsing pressure encountered and the joints are made sufficiently strong to hold the string together.

The tabulation below gives length of string of casing equivalent to the pressure exerted by a column of fluid of the same length and the length of string of casing equivalent to the tensile strength of the joint.

Size of Casing	Weight Per Foot	Length of String Equiv'l't to Collapsing Strength of Casing Safety factor of 2½	Length of String Equiv'l't to Tensile Strength of Joint Safety factor of 2½
7	26	3418	6226
8⅝	36	2908	6340
10¾	45	2030	5919

Automatic Drilling Control. During the past few years automatic controls of power applied in rotary drilling operations have been developed. The function of these controls is to maintain a positive torque on drill pipe, which is accomplished by automatically controlling the weight or pressure on the drill bit. The weight on the bit is automatically varied, according to the desistance encountered in the formation. By use of these controls the drilling operations are less dependent on the human element, straighter holes are drilled, and there is less wear on drill pipe and casing.

Changes in Drilling Equipment. Rotary drilling equipment is of the highest type of machinery and of best workmanship, and is designed on engineering principles. The class of machinery is as good or better than in any other industry. There have been many refinements during the past five years. For instance, previously most all equipment was made from cast iron and the moving parts were equipped with common babbitt bearings, while today most all drilling equipment is made from cast steel and all important bearings are roller bearings of the same type as those used in the best makes of automobiles.

Improvements have been made in oil field boilers. During the past 10 years, the size has been increased from 45 horsepower to as large as 125 horsepower for an individual unit. By necessity, oil field boilers for drilling are portable and are moved from place to place at short intervals. The old type of 45 horsepower boiler weighs 10,000 pounds, the 100 horsepower weighs 26,000 pounds, and the 125 horsepower weighs 27,500 pounds. Each drilling rig requires from 150 boiler horse power to 300 boiler horsepower. The 75 horsepower and 90 horsepower boilers are most popular because larger boilers are unhandy to transport. Five years ago steam pressures of 100 pounds were used in oil well drilling work, while now the pressure requirements is 250 pounds and, in some cases as high as 300 pounds. This change has come about as a result of drilling to greater depths and due to keen competition in drilling, which necessitates the saving of time. The use of high steam pressure has resulted in a change in the design of steam valves for engines and pumps. The tendency is to use the piston type of steam valve.

Drilling engines capable of developing 300 horsepower are used on all rotary drilling rigs of the modern type. Slush pumps have also undergone changes and improvements. Ten years ago slush pumps were made to handle maximum pressures of 500 pounds per

square inch but now they are made to handle pressures of 1500 pounds.

There are many other labor saving devices which have been developed to aid in speeding the work on rotary drilling outfits. Among others, a recording instrument has been perfected which shows the details of drilling operations over a 24-hour period.

Power Selection

The proper selection of power to be used on any drilling well is still a question of debate. Steam is being used on the majority of the wells now being drilled. However, from the standpoint of power costs, steam is usually the most expensive. Electricity and internal combustion engines are coming more and more into use in drilling operations.

Steam Power. A majority of the experienced workers in the oil fields have gained a knowledge of the use of steam. They know boilers, steam engines, and steam pumps. The locomotive type, or the firebox boiler, is universally used. The use of steam power is entirely dependent on water supply and a lack of water necessitates the use of gas engines or electric power.

Electric Power. The adaptation of electricity as a source of power has been one of the outstanding improvements of recent years in drilling. Very satisfactory results are obtained by the use of electric power and its use for drilling purposes is being increased from time to time. Of course, electricity can be used only in those districts where the supply is available. It is only natural that wildcat drilling is often too far from transmission lines to warrant its use. The power cost for a well 3500 feet deep in the Gulf Coast district amounts to about $625.

Gas Engine Power. Gas engines of the automotive type have not been used extensively for drilling with the rotary, but have been used with some satisfaction. Their most extensive use has been in their application on portable outfits for shallow drilling and for exploration work. Fuel costs for gas engine power are lower than for steam. However, the drilling crews are, as a rule, unfamiliar with the operation of gas engines and, therefore, the care and repair items often become of serious consideration. Because of this, operators will often use more expensive power rather than train a crew to handle gas engine equipment.

Diesel Power. The use of Diesel engines for rotary drilling has been limited. However, it is believed that the Diesel engine will be used in the oil fields in the future, and particularly in areas where steam power is expensive and electricity is not readily available.

Crooked Holes

During the past few years and, in fact, in some districts it has been during only the past few months, operators have been active in measuring holes to determine the amount they deviate from the vertical. It has been a well known fact for years that most holes, particularly those drilled by the rotary method, were not straight. However, the amount of crookedness has been a surprise to many. For instance, in the Seminole fields in Oklahoma, surveys have shown that holes vary from the vertical as much as 45 degrees and a hole which does not vary more than 10 degrees is considered a straight hole. In the West Texas fields, crooked holes have also been reported. Angles as high as 40 degrees from the vertical have been reported. However, there are districts where comparatively straight holes are drilled. For instance, it has been found that wells in the Cotton Valley field in North Louisiana are practically straight. In general, wells in the Gulf Coast district are straight.

Drilling straight holes is a problem to which the executives, practical field men, and engineers are applying their best efforts. A satisfactory solution has not yet been developed but much progress has been made.

Methods and Cost of Drilling in Fields of Southwest

Throughout Kansas the cable tool method of drilling is used. The maximum depth of wells is about 3200 feet. The drilling cost for a 2500-foot well is about $27,000 and a well 3200 feet will cost about $35,000.

Both the cable tool and the rotary method of drilling are used throughout Oklahoma; however, during the past two years, in an intensive drilling campaign carried on in the Seminole area, the rotary method was used. The depths to which wells have been drilled in this area have been much deeper than past requirements in that and other sections of the state. The rotary method of drilling is now used to a depth of approximately 4000 feet and, in every case, the wells are completed with cable tools. The depths of the wells in the Seminole district range between 4100 feet to 4600 feet. The cost will vary from $57,000 to $65,000 per well or at the approximate rate of $14 per foot.

Early drilling in the new West Texas fields was done by the cable tool method; however, in the Hendricks pool in Winkler County, the rotary method replaced cable tools. This was due to the inability of the operators to drill high pressure gas sands by the cable tool method. The depth of the wells is about 2900 feet and the cost is approximately $32,000, which amounts to about $11 per foot.

In the drilling of the deep well in West Texas which, as previously stated, was completed at 8525 feet, cable tools were used throughout. Standard machinery was used and the only special equipment required was extra brakes on the sand reel and bull wheels for extreme depths. The over-all drilling time was 1030 days, with 870 work-

(Continued on page 92)

Petroleum *Given* Prominent Place *at Engineers Meet*

DALLAS, Texas.—Subjects pertaining to the petroleum industry figured prominently on the program of the spring convention of the American Society of Civil Engineers held here April 24 and 25, and a large number of prominent oil company officials and engineers were in attendance from various sections of the Southwest. Election of officers and usual business matters were disposed of by various committees on Tuesday prior to the formal opening of the convention. Papers and talks dealing with various phases of the petroleum industry occupied the bulk of the program of the first day, while the second was largely devoted to divisional meetings, regarding irrigation, city planning, sanitation, mapping and surveying. Although the latter technical sessions concluded the Dallas program, the engineers were guests of the Texas Power & Light Company, April 26, for an all-day excursion to the latter concern's huge lignite mines and power plant at Trinidad, located in East Texas.

W. W. Scott, petroleum engineer for Humble Oil & Refining Company, Houston, delivered a paper on the modern methods of deep well drilling, with Walter H. Meier, Dallas, chief engineer for the Atlantic Oil Producing Company, assisting in the discussion that followed this paper. A paper and talk dealing with oil and gas line construction work was contributed by E. C. Kincade, vice-president of the Gulf Pipe Line Company, Houston, while Ray McGrew, Shreveport, president of the Standard Pipe Line Company, aided with the discussion.

J. Edgar Pew, Dallas, vice-president of the Sun Oil Company and former president of the American Petroleum Institute, spoke on the development of the oil and gas industry in the Southwest, and reviewed the early history of oil in Texas.

An informal banquet was given the visiting engineers and their wives on the evening of April 24, following which an address on the petroleum industry was given by R. B. Whitehead, chief geologist for the Atlantic Oil Producing Company, Dallas. A motion picture on the petroleum industry was also shown in connection with this program.

Paper Read Before A. S. C. E., Dallas, April 24-25, 1929

Design *and* Construction *of* *Oil and Gas* Pipe Lines

By E. C. KINCADE
Vice-President Gulf Pipe Line Company

THERE is no fundamental difference in design of gas pipe line or oil pipe line systems, some of the details are quite different. Gas line joints must be tighter to prevent leakage, ordinery screwed joints are not sufficient for gas, while they will hold crude oil without the slightest signs of leakage, if properly made up. Gas is pumped through the line with compressors, while oil is pumped by fluid pumps. Gas has the advantage of being ready for consumption as produced while the larger part of crude oil must be refined to be properly consumed.

Gas lines need no storage system, the line itself serving as carrier and storage and gas can be produced as consumed. Oil lines require storage at the initial point of receipt, at each pump station, and point of delivery. For the benefit of the refineries, it is often necessary to keep different grades of oil separate for ease of refining. Grades are identified by gravity, viscosity, and whether sweet or sour. The different grades require separate tankage at each point it is handled and often separate pipe lines, but it is common practice displacing line, one grade with another. There is some contamination at either end of the displacement which amount depends on velocity of oil, moving through line and difference in gravity, viscosity and length of line oil is displaced. In practice this is generally determined by experiment.

The general laws for flow of gases or liquids through a pipe line are the same. But in computations of flow, there are several factors that an engineer must take into account, such as roughness of surface, exact size of line, temperature, gravity, viscosity, topography. In gas lines, water or gasoline, is liable to collect in low places, while sand or sediment, collect in oil lines. While some natural gas does not follow Boyles absolutely, its effect on flow is not serious. There are several formulas for computation of flow of gas through pipe lines, which agree very closely with actual conditions found in actual operation of lines, there being few variable factors and their relations do not affect capacity of lines, as in viscous liquids in oil lines.

Effect of Viscosity

Up until a few years ago, oil being produced was comparatively light, range 35 to 40 Baume, viscosity 35 to 50 Saybolt at 60 F. Formulas for water worked out very well, but in last few years the heavy viscous oils produced have led to considerable investigation of the hydraulics of petroleum. The result there is available to the engineers formulas for determining effect of viscosity on flow in pipe lines, bearing in mind that viscosity of the oil will be at the temperature of that surrounding the oil at time of flow through pipe line and will change as temperature changes. Often it is impractical to run viscosity tests at different temperatures at which oil is to be handled. This can be overcome by running three or more samples at different temperatures and platting on log paper. When designing lines where a line of composite sizes are used, relation of size lines should be checked as the viscosity changes the relation of carrying capacity between the sizes as the viscosity increases, as an example, a six-inch line handling water has approximately 50 per cent. the capacity of an eight-inch line. If handling oil with a viscosity under 100, the ratio is approximately the same, but with oil of 1200 viscosity only approximately 30 per cent.

Before a design can be completed, the line must be located and surveyed and profile made. Recent practice, an ariel photographic survey covering the proposed route from which the best location is selected, then followed by regular survey to make exact location. The ariel photograph enables the engineer to plat the course to miss obstacles of various kinds. The profile is very necessary to determine location of stations, size of pipe line and capacity, unless the country through which oil line passes is level. For oil lines, it is necessary to take into account the difference in elevation, station to station, or any high points between stations, in order to compute the correct spacing. Stations should be located to balance up the capacities of different sections of pipe lines. From an economic operating standpoint, pump stations should be located so the direct operating expense approximately equals the fixed on pipe lines. This is governed by the class of pump stations and character of the oil being handled, for the lighter oils about 50 miles apart, while heaviest oil, about 15 miles apart.

In the past, a majority of oil pipe lines have been connected with screwed joints, gas lines with packed couplings. The present trend is to weld lines and I doubt if there will be another screwed oil trunk line or packed coupling gas line constructed of any considerable length. The problem of securing competent welders has passed, and automatic electric welding for pipe lines is being developed which will further simplify welding. Lines are either electric or acetylene welded. Both have about an equal number of sponsors. In welding lines, provision has to be made for expansion and contraction, due to the temperature changes.

The temperature range in this section is about 50°, range from 30 to 80, or approximately 20 inches per mile. The packed couplings on large gas lines have taken care of this in the past, screwed lines by stress in the material and laying crooked and crowding into straight ditch which in pipe line langauge is called "slack." The amount of slack is guessed at by the man laying the line and is generally the best he can do. But often times this is not sufficient and line pulls apart. I think a majority of lines laid in future from 10 inches up will have expansion joints. A corrugated section welded in line seems to be the best at present. There is no uniform practice of ditching for the line before pipe is laid or after. I prefer ditching before, especially if blasting is to be done. Ditching generally is done by machine. There are two types, wheel type and chain type. Wheel type has advantage in sticky clays and gumbo, and chain type has advantage in sandy and rocky soils.

Pump stations for handling oil are very little different than if they were handling water under pressure of 700 or 800 pounds. More precaution is taken to prevent fire. Some operators have a fire wall between engine and pump room if pumps are driven by Diesel or gas engines. If steam pumps are used, boilers are in separate buildings. Oil is measured by gauging storage tanks, and stations are connected by telephone or telegraph, and quantities are checked hourly. Gas pumping stations are generally gas engine driven compressors, compressing gas to 400 or 500 pounds, receive the gas from incoming lines through filters to take out sand and scale to prevent injury to compressor

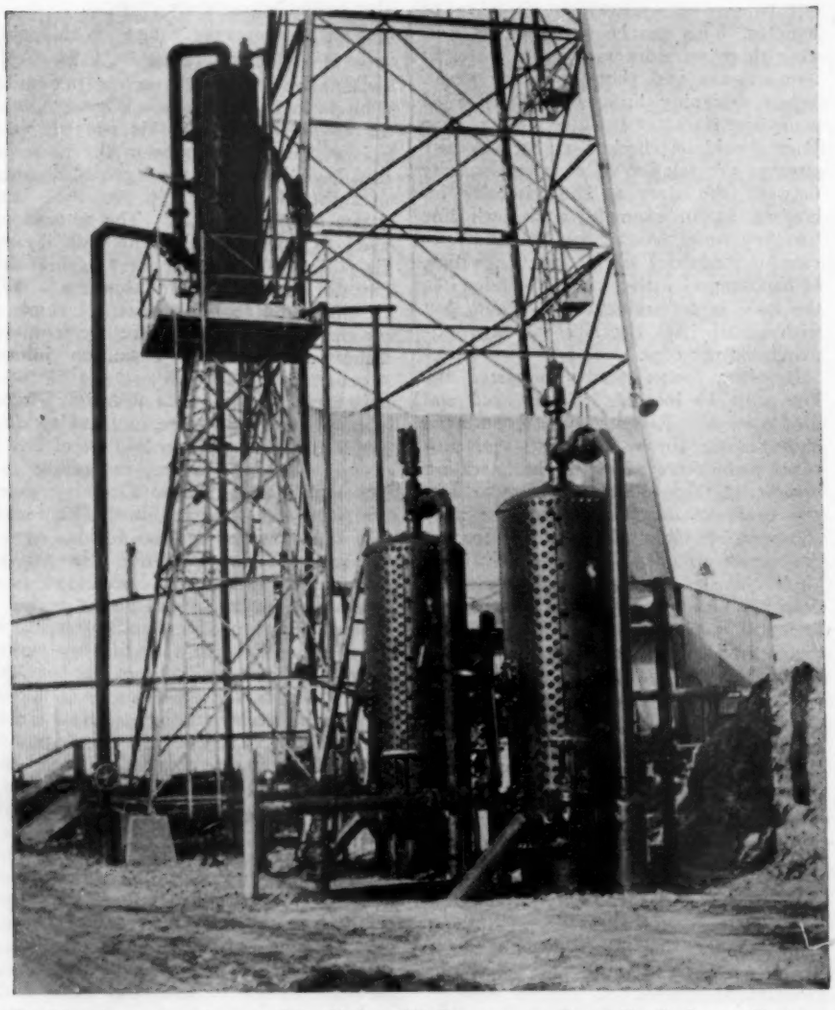
(Continued on page 92)

UNION OIL COMPANY'S
Method of Storing Gas
In the Ground at Santa Fe Springs

By BRAD MILLS
Staff Representative

BY utilizing surplus gas, which otherwise would be wasted, Union Oil Company is injecting, or storing, about 20 million cubic feet daily in the Meyer and Foix zones at Santa Fe Springs, thus setting an example which may ultimately go a long way toward solving the problem of gas wastage in fields having more than one producing sand.

As gas production from the Buckbee and Nordstrom zones increased, gas wastage increased accordingly. At the peak of production near the end of February, gas production from the field was in excess of 500 million cubic feet daily. It was possible to care for only a small part of this huge total. Efforts were made to bring all operators to a common agreement, so that the surplus gas from both the Buckbee and Nordstrom zones might be stored in the Foix and Meyer zones above. When boiled down, it amounted to a huge repressuring of two nearly depleted zones, with no loss from the zones then being developed. Some dissension arose and the plan was dropped.



Double gas trap system used by Union Oil Company at Santa Fe Springs. Traps on ground release gas at more than 300 pounds

Starting in a modest way, and without cooperation from adjoining operators, Union Oil Company inaugurated a conservation program all its own. Both the Meyer and Foix zones were largely depleted on its leases, and while still producing several thousand barrels each, the pressure had become so low that they offered as nearly ideal storage reservoirs as could be expected. Several wells were producing only a small amount of oil and their temporary transfer to injection wells would result in only a small loss of production.

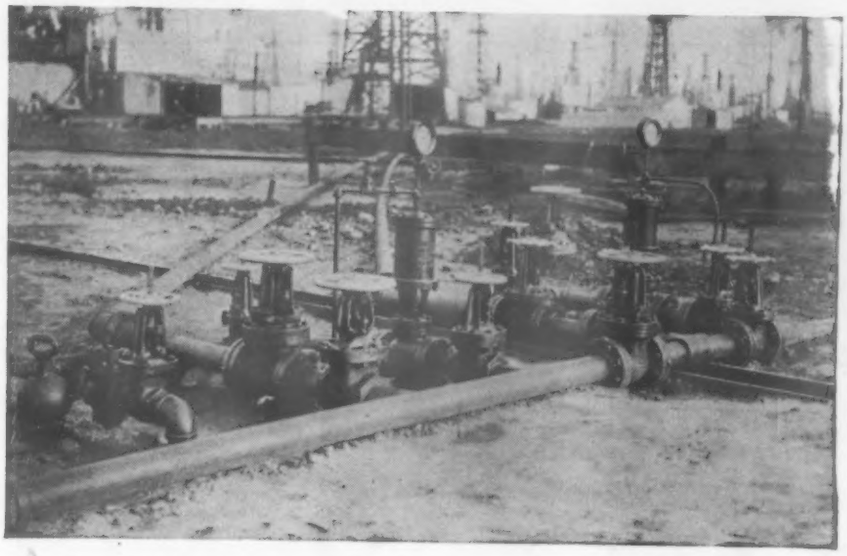
Process of Repressuring

Such an extensive plan of gas storage was entirely new in California and much pioneering had to be done. There was a silght variation in the theories held concerning the action of the gas in the sand. It was necessary to study conditions as they were met, and to act in accordance with the experience gained from day to day. The precedent of storing gas had been set in other fields, but it was not possible to profit greatly from entirely different conditions.

Selecting wells as far from the property lines as possible, surplus gas was injected in small quantities at first, so that the action of the wells might be studied. This gradual injection was also expected to prevent channeling of the gas. As the wells responded to the storage process, the quantity of gas was increased.

High pressure of the new wells at Santa Fe Springs was a very desirable condition, provided some method could be devised to separate the gas and oil at the original pressure without an appreciable drop between the casing pressure and the gas line pressure on the injection system. The average tubing pressure of the Nordstrom and Buckbee zone wells was above 300 pounds. By using the old system to trap the gas, the loss in pressure was so great that little could be done with the gas as it came from the low pressure traps.

To overcome the loss in pressure and



Individual header used on Union Oil Company's wells at Santa Fe Springs. Back pressure regulators are set to blow off at 325 pounds

to utilize as nearly as possible the energy of the wells, Union Oil Company engineers devised a double-trap system which incorporated many features never before used in any field. The high pressure trap was the key to the injection system. It was followed in series by the low pressure trap, which served an important purpose but which had no place in the injection system. By using the high pressure trap, it was possible to inject gas into most wells at the well pressure, thus eliminating the expensive process of compressing gas to the desired pressure.

High Pressure Traps

These high pressure traps have eliminated the necessity of installing a huge compressor plant. It has been estimated that it would require a plant costing several hundred thousand dollars to do what is being done by the double-trap system. Under a single trap system, the gas would be picked up at a very low pressure. The cost of the compressor plant is based on the energy required to boost the gas from a few pounds to the 300 pounds now carried without compressors.

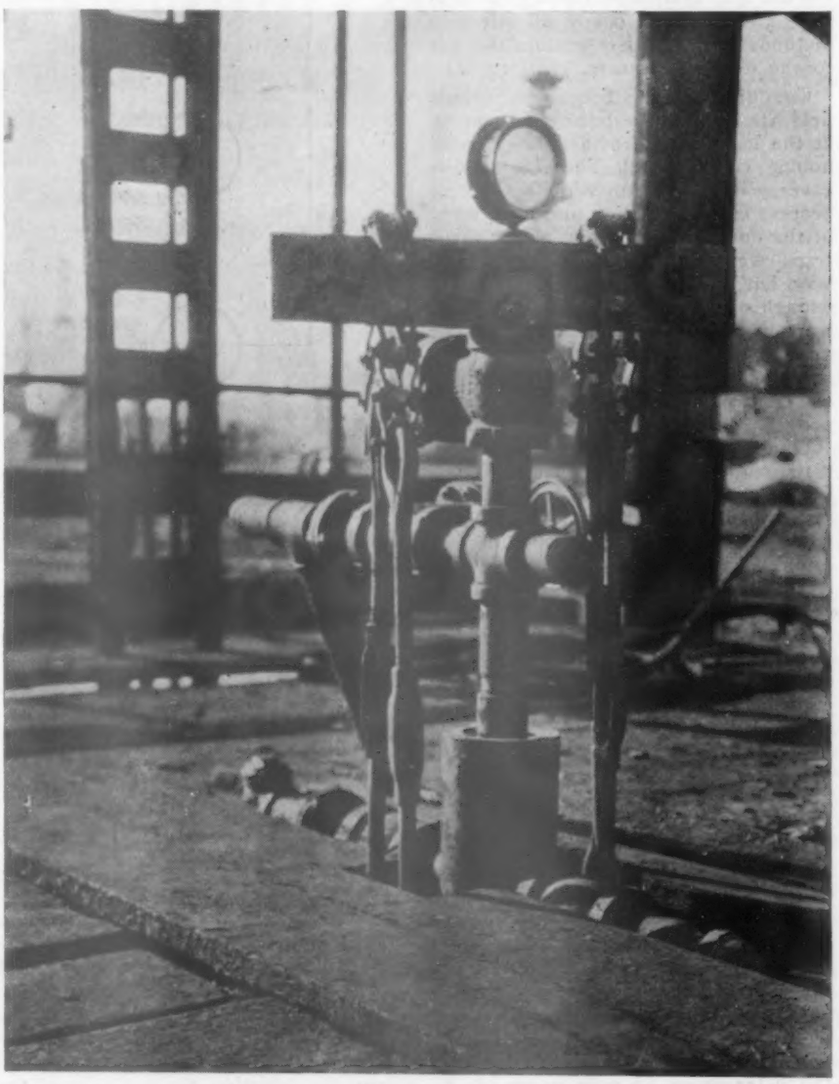
By following the gas from the well to its final distination, it is readily seen that the function of the high pressure trap is an important one. From the Buckbee and Nordstrom zone wells, the gas and oil go to the high-pressure traps. From these traps the gas is taken off at approximately the well pressure, or 300 pounds. The gas is then metered and sent through a header, which is equipped with back pressure regulators set at 325 pounds. This serves as an individual check on each well and is an added precaution. The gas then goes to the 6-inch, high pressure line, which leads to the circulating header, to the 300-pound injection header and to the suction of the high pressure injection compressor. The gas up to this point has not been boosted in any way.

The 300-pound gas lines completely belt the leases, and it to this line that nearly all deep wells feed their gas. This pressure is so much higher than that of either the Meyer or Foix zones that it will be some time before the injection wells will require a greater pressure.

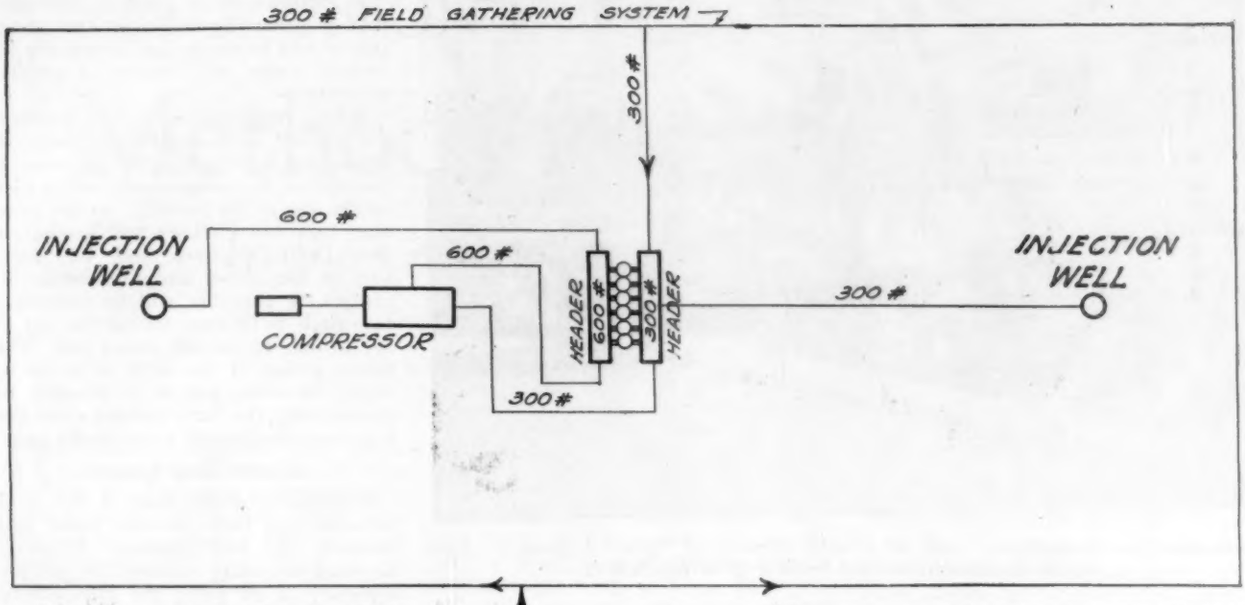
Wells requiring a higher pressure are hooked onto the high-pressure or 600-pound belt line. This pressure is maintained by compressors, which pick up the gas at 300 pounds. As the pressure from the Buckbee and Nordstrom zone wells declines and the pressure in the Meyer and Foix zones increases, it probably will be necessary to switch wells now taking the gas at 300 pounds to the 600-pound line. The future action of the wells is problematical, however, and it is possible to discuss only the facts learned since the injection was started a few weeks ago.

Double Trap System

Regardless of the drop in the field pressure, the high pressure traps will conserve the well pressure. When it becomes necessary to boost the gas for injection to all wells, the higher rate at which the compressors will pick up the gas from the high pressure traps,



Simple hook-up at injection well. Gas enters casing through feed line at floor level. Well may be changed to producer in a few minutes



as compared with picking it up at approximately atmospheric pressure from the old trap system will be a huge saving. The greatest cost in all injection methods is incurred in getting the gas to the desired pressure.

Conditions in the Santa Fe Springs field are now the best for repressuring at the least cost, provided the correct hookup can be found. The greatest discoverey in connection with the storing process is the evolution and refinement of the double-trap system. Even three traps were used in an experimental way, but they did not offer advantages enough over the double-trap system to warrant their use on many wells. The main point was to get the high pressure gas into the storage wells with the least effort, and the first of two traps proved very satisfactory.

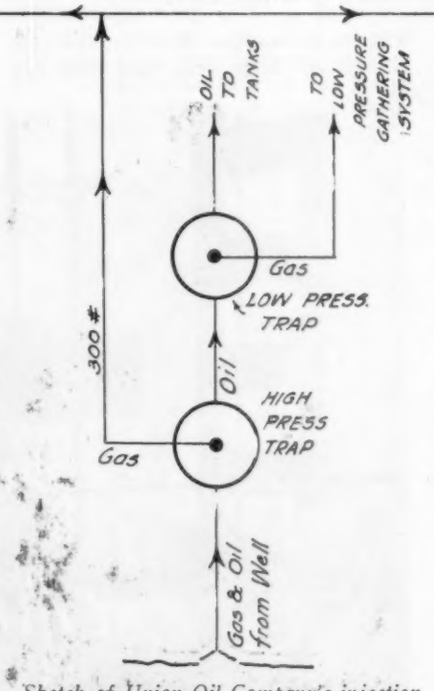
One of the features of the 300-pound distribtuion system is the central relief or pop station. New wells are constantly being placed on production and when the pressure passes the desired limit, the gas is blown to the air.

The header or manifold system is arranged so that gas may be injected into any well at any desired pressure by opening one valve and closing another. The three large manifold lines carry 300 pounds, 600 pounds and kick over pressures. The last named is used for starting stubborn wells or to meet emergencies.

Hook-up Used

The actual hookup at the injection wells is very simple. The gas is injected through the casing. The tubing is left in the hole, making it possible to again produce the well by opening the valve on the lead line and closing the valve on the injection line. If the well were to be placed on gas lift, it would, of course, be necessary to open the valve of the gas circulating line.

The company is now using 10, 70-horsepower Chicago Pneumatic steam compressors for the high pressure in-



Sketch of Union Oil Company's injection system in Santa Fe Springs field

jection. It is a temporary arrangement, the compressor outfit being portable and easily dismantled.

Storage or injection is now being done through 17 wells. Daily gas injection totals about 20,000,000 cubic feet, of which 3,000,000 cubic feet is going into the Foix zone and the remaindler into the Meyer zone.

Each well presents an individual problem, some taking the gas readily, with others requiring more effort. Wells in the Foix zone are more stubborn than those in the Meyer sand, presumably due to the greater depletion of the latter.

While there has been a slight increase in production from producers near the injection wells, the company does not hope or wish to obtain immediate results. If more oil is produced at this time from the zones being repressured, the purpose of the storage is defeated. It is the Union Oil Company's plan to repressure the Foix and Meyer zones so that they will produce more oil when the crude is really needed, and when the market will better stand the increase.

Gradual Pressure Increase

Although 300 pounds has been used as a basis for calculation, the main distribution pressure may be lowered or raised slightly to meet conditions.

Field engineers believe it will be possible to inject or store gas in the Foix and Meyer zones until a pressure of 800-1000 pounds is required. Starting at 100,000 cubic feet daily in some wells, the amount already has been increased to 2,500,000 cubic feet.

What actually takes place in wells during injection has been a subject of interest, but one on which a wide difference in opinion exists. Theoretically, it is contended that the gas literally pushes the column of oil out of the hole and back into the formation. Day after day the oil is supposed to creep farther away from the hole. The bulk of the gas probably filters through the oil and enlivens the sand over a wide area. At least this is what seems to happen at Santa Fe Springs, where light oil is produced. Another theory seems partial to the belief that the gas filters extensively through the oil, or at least becomes a part of it. There is no way to ascertain just what does take place.

Channeling is the tendency of the gas to follow only a few courses, rather than to filter through or push back the oil uniformly into the formation. Apparently there has been little trouble along this line at Santa Fe Springs, but there is no positive way of confirming the belief at this time. Some of the wells taking a large quantity may be releasing it to the sand at a considerable distance from the injection well.

M. L. Witherup, manager Venezuelan Atlantic Refining Company (second from right); Mrs. M. L. Witherup (center); H. C. Roberts, drilling superintendent, Venezuela Gulf Oil Company (third from right); "Bud" Dedmon, drilling foreman, Venezuela Gulf Oil Company; Jim Tong, geologist, Venezuela Gulf Oil Company, (last on right) Vincent Vandiver, chief scout, Creole Petroleum Corporation (carrying camera)

Ten Potential Oil Fields *On Venezuelan Horizon*

By ROY E. LEIGH
Special Foreign Representative

MARACAIBO, Venezuela. — Although the four major companies operating in Venezuela have agreed on a restriction program calculated to control production of Maracaibo Basin during the remainder of the year, their agreement, presumably, does not cover wildcat operations, which are being prosecuted with amazing diligence, considering the present condition of the world's oil markets.

Thirty-odd rigs are regularly employed in wildcat or semi-wildcat drilling. No less than 10 new fields give promise of commercial production which could be made available in from six to 12 months, if profitable market outlets could be found. Creole Petroleum Corporation (controlled by Standard Oil Company of New Jersey) alone holds at least four cards up its sleeve, some of which may prove to be aces. The Shell, Gulf Oil Corporation, Richmond Petroleum Company (Standard Oil Company of California), Orinoco Oil Company (Pure Oil Company), and North Venezuelan companies also own certain very promising properties on which the actual existence of oil has been proven.

Venezuela Outlook Bright

Hope for better times is ahead. A study of the Venezuelan wildcat situation seems to indicate that Venezuela's future may be very bright, insofar as oil is concerned, and that the future may bring definite improvements in the general market situation. Otherwise five or six of the most powerful oil units in the world would not be engaged in actual drilling operations having as their purpose development of additional crude oil reserves.

However promising these several new fields may appear, there is not one in the lot which gives indication of ranking in importance with La Rosa, Lagunillas, or Mene Grande.

Aboriginal inhabitants of the Goajira Peninsular, which, with the Paraguana Peninsular, form the Gulf of Venezuela, through which entrance is made to Maracaibo Lake

Barring the possibility that other companies may discover production nearer tidewater, the Colon Oil Corporation is scheduled to open up Venezuela's next commercial oil field about January 1, 1930. This field is situated in Colon District, about 80 miles southwest of Lake Maracaibo and less than 20 miles northeast from the Colombian boundary. The Colon Oil Corporation has about two dozen wells shut in which have an aggregate potential production of from 15,000 to 20,000 barrels per day.

New Colon District Field

Five different producing horizons have been found which range in depth from 875 to 3800 feet. Light oil is found in sandy shale at about

WILDCAT DRILLING OPERATIONS IN WESTERN VENEZUELA

Latest Reports (by mail) from C. C. McDermond, Maracaibo

District	Location	Well	Status
	American-British Oil Company		
Buchivacoa	Eastern Area, 10 miles northeast of Hombre Pintado	Las Palmas 4	Fishing, 2817 feet.
		Las Palmas 5	Coring, 1,525 feet.
	Central Area Exploitation Company		
	12-14 miles northeast of El Mene Field	Hombre Pintado 3	To test 2,808 feet.
		Hombre Pintado 4	Shut down 3,033 feet.
		Hombre Pintado 5	Rigged up; shut down.
	Colon Oil Corporation (Shell)		
Colon	On Rio Tarra, near Colombian border, and about 70 miles southwest of Maracaibo Lake	Rio Tarra 32	Pulled 8¼-in. casing, 2500 feet.
		Rio Tarra 34	Drilling 2360 feet.
		Rio Tarra 35	Drilling 2360 feet.
		Rio Tarra 36	Drilling 2020 feet.
	Near Rio Tarra Field.	Los Manueles 3	Total depth 3846 feet, Pulled back and testing at 3770 feet.
	Near Rio de Oro	Rosario 1	Drilling 2815 feet.
	Creole Petroleum Corporation (S. O.-N. J.)		
Perija	West shore of Lake Maracaibo.	Garcia 1	Drilling 5,080 feet.
		Garcia 2	Location.
		Garcia 3	Location to be made Before June 1, 1929.
	Northern part of the District of Perija, 8 kilometers west of Rio Palmar	Zambapalo 2	100-bbl well; shut in; total depth 1266 feet.
		Zambapalo 3	2-3,000-barrel well; shut in; total depth 1740 feet.
		Zambapalo 4	C/o after 3 shots at 1,610 to 2,000 feet.
		Zambapalo 5	Preparing to shoot at 1,640 to 1,820 feet; total depth 2462 feet.
		Zambapalo 6	Bit lost in hole To be cleaned out. Total depth 2,462 feet.
		Zambapalo 7	Drilling 2,225 feet.
		Zambapalo 8	Cemented casing April 3; preparing to drill in.
		Zambapalo 9	Drilling 2,170 feet.
		Zambapalo 10	Drilling 1,215 feet.
		Zambapalo 11	Derrick completed.
		Zambapalo 12	Clearing off location.
Piar and Monagas	Eastern Venezuela	Monoa 1	Drilling 3,135 feet.
		Monoa 2	Rigged up; shut down.
	Orinoco Oil Company (Pure)		
Mara	10 miles northeast of La Paz Field	Netick 1	Sidetracking, 5,550 feet.
	Richmond Petroleum Company (S. O.-Calif.)		
Democracia	65 miles northeast El Menne	El Mamon 2	Coring, 2,575 feet.
		El Mamon 3	Coring, 1,200 feet.
		El Mamon 4	Gas blow-out which occurred March 28 now under control.
	Approximately 14 kilometers southwest of Urumaco Field	Culebra 1	Coring, 2,700 feet.
Urdaneta	12 miles south of Concepcion Field	Larrain 1	Started drilling on March 30, 1929.
(Northern) Perija	35 miles southwest of La Paz Field	Neopod 1	Building derrick.
	Venezuela Atlantic Refining Company		
Mara	30 miles northwest of La Paz Field	Zuljy 1	Cemented 8⅝-in. casing 2,407 feet.
	Venezuela Gulf Oil Company		
Mara	25 miles northwest of La Paz Field	Amboy 1	Fishing 3890 feet.
Maracaibo	West shore of Lake Maracaibo, 18 miles southeast Concepcion	Carmelo 1	Testing 5461 feet.
	Punta Bernal, near mouth of Rio Palmar.	Bernal 1	Drilling, 4356 feet.
	Venezuela Sun Oil Company		
Sucre	40 miles south of Mene Grande	Boscan 4	Drilling, 4905 feet.

the middle of the First Coal Horizon (Lower Miocene). Oil is also found in El Cubo sands (Oligocene), which are from 350 to 400 feet in thickness. The Mirador sandstone, of Eocene age, yields showings of oil throughout its thickness of around 1000 feet. Several productive sands are found in the Third Coal Horizon, also of Eocene age, below which is found the Tabla sand, a reservoir of light oil which is 60 to 70 feet thick. The Colon shales of the Upper Cretaceous series also yield some oil. Oil found at these various levels is of asphaltic base and ranges in gravity from 23° to 32° Baume.

Development is being carried on with four rigs, in anticipation of completion of storage, pipe line and shipping facilities now under construction. Well 32 has been completed at a depth of 2500 feet; 34 and 35 are both drilling at around 2400 feet; and 36 is below the 2000-foot level.

Operations are now under way for construction of 90 or 95 miles of eight-inch pipe line for transportating this oil to tidewater. The new line will extend via Santa Rosa and Encontrados, near where the Rio Zulia flows into the Rio Catatumbo, thence to Boca Escolante, near the mouth of the Rio Escolante, where a tank farm, cargo pump station and loading pier will be built. Pumping stations probably will be erected at or near El Cubo, Santa Rosa and Encontrados.

Pipe Line Project

This construction program includes building about 60 kilometers of narrow-gauge railroad, of which about half is intended as a permanent facility for hauling in supplies and equipment, the other half being needed primarily for stringing line pipe. Gasoline locomotives will be used at first for hauling pipe and materials, but steam engines of the type used at Mene Grande may be added later.

The new camp at El Cubo is complete; about one-third of the railroad construction work has been done, and pipe for the new line is just beginning to arrive. Pipe line gangs are already on the ground. Plans call for completion of the line, which will have a capacity of approximately 20,000 barrels per day, by the end of the year.

Colon Oil Corporation is operating another rig on the Los Manueles concession, which is located a short distance

Venezuela Gulf Oil Company's camp, Amana 1, discovery well drilled in the District of Mara, State of Zulia, Venezuela —Photo by C. C. McDermond

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Say you saw it in The OIL WEEKLY

One of the seepages of oil and asphalt which led to the discovery of the Totumo field, in the District of Perija

northeast of the Rio Tarra field and about midway between the Tarra and Zulia rivers. The discovery well, Los Manueles 1, was completed on March 14, 1927, with an initial production of 55 barrels oil per day from a depth of 3549 feet. The third well is being tested at 3770 feet, after having been plugged back to that horizon from 3846 feet.

A geophysical survey indicates that the Rio Tarra structure may extend in the general direction of Encontrados. A wildcat well known as Rosario 1 is being drilled near the Rio de Oro to test out this theory. Latest reports are that it has reached 2815 feet.

Operations in the Rio de Oro field, situated along the Colombian border about 40 miles northwest of the Rio Tarra field, have been suspended temporarily. Three wells have been drilled in this district, one of which showed high gravity oil mixed with salt water. The Motilone Indians, a hostile tribe inhabiting this remote district, have probably retarded its development to some extent, their long arrows having already caused the death of two or three hardy pioneers.

Totumo field, situated in the District of Perija, near the Palmar River and about 100 kilometers west of the city of Maracaibo, was discovered by the Caribbean Petroleum Corporation, which began operations several years ago. The first well, located according to Shell custom in close proximity to a very promising seepage of oil and asphalt, was drilled with a Star machine to 550 feet, where the rig was lost by fire. The second well, also located within a stone's throw of the seepage, found oil at 1227 feet, at which depth the well was said to be capable of producing from 300 to 500 barrels per day. Threatened by one or two "floating" claims which hung over its concession, the Shell subsidiary discontinued operations.

Several years later, conflicting claims having been compromised, bought in, or consolidated, Rio Palmar Oil Corporation took over the property and resumed operations. The discovery well was deepened to 1266 feet; and Zambapalo 3 was spudded in on January 7, 1928. It came in with an initial production of between 2000 and 3000 barrels per day from 1649 feet. Afterward it was deepened to 1740 feet. It was finished in a highly fractured igneous rock, small particles of which fell into the hole in such quantity as practically to choke it up. A liner was inserted too late to save the flow of oil. There being no pipe line and only limited storage facilities, the well was left in this condition, with the bottom of the liner resting on rock debris at a point near the top of the productive zone, where it remains. Presumably, it will not be restored to production until a pipe line is built, which doubtless will not occur until the presence of oil in commercial quantity has definitely been proved.

Creole Petroleum Corporation, formed by merging the assets of Creole Syndicate with those of Standard Oil Company of Venezuela, a subsidiary of Standard Oil Company of New Jersey, took over the properties of Rio Palmar Oil Corporation in July, 1928, since which time efforts to solve the riddle of Totumo have been redoubled.

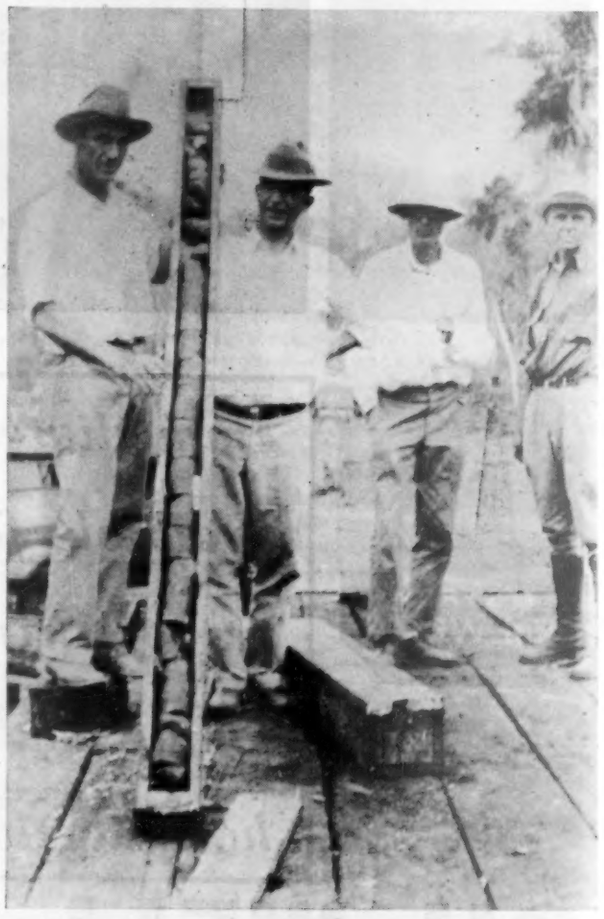
The fourth well was begun by Rio Palmar in March 23, 1928, using rotary tools. It was drilled to 3138 feet. Recently it was shot with 350 pounds of explosive at 1970-2000 feet, 250 pounds at 1915-1935 feet, and 400 pounds at 1610-1630 feet. The third shot seems to have damaged the bottom joint of casing, which impedes cleaning out operations now in progress.

Preparations are also being made to shoot Zambapalo 5, the total depth of which is logged as 2462 feet. An oil-bearing rock was found at 1640 to 1820 feet, and it is in this horizon that the shots will be placed. This well flowed by heads and pumped around 30 barrels per day on a 10-day test.

No. 6, another potentially productive well, is shut down at a depth of around 2500 feet. It also needs to be cleaned out.

Thus, the Standard subsidiary has five potentially productive wells, each capable of producing from 30 to 3000 barrels of oil per day, with the possibility that greater production may be found if current shooting experiments are successful.

(Continued on page 94)



Eight-foot core of Thracite, a hard igneous rock, recovered from Creole Petroleum Corporation's Zambapalo 7, Totumo field. Left to right—Henry Linam, of Shreveport, field superintendent; H. I. Fry, of Maracaibo, assistant manager; G. R. Boyle, resident geologist; S. H. Cathcart, subsurface geologist, Maracaibo

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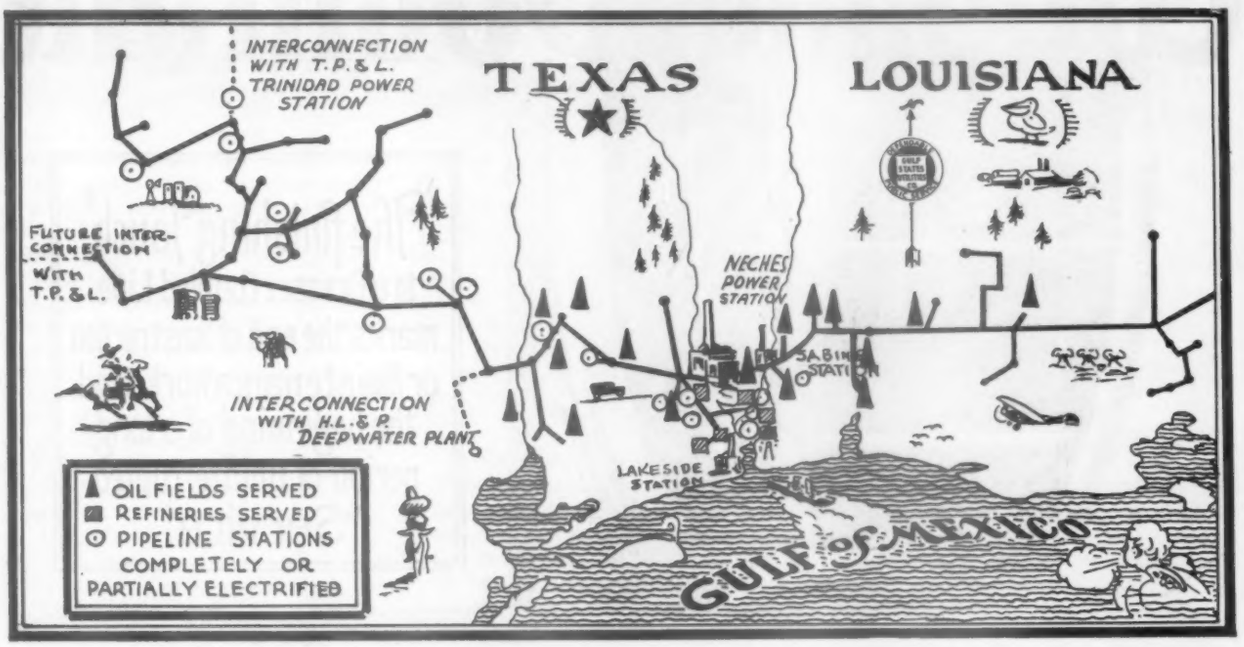

The use of Central Station Electric Power has steadily increased and a number of extensions to the present system are planned to serve the industry even more completely in this territory.

Gulf States Utilities Company

WESTERN PUBLIC SERVICE CO.

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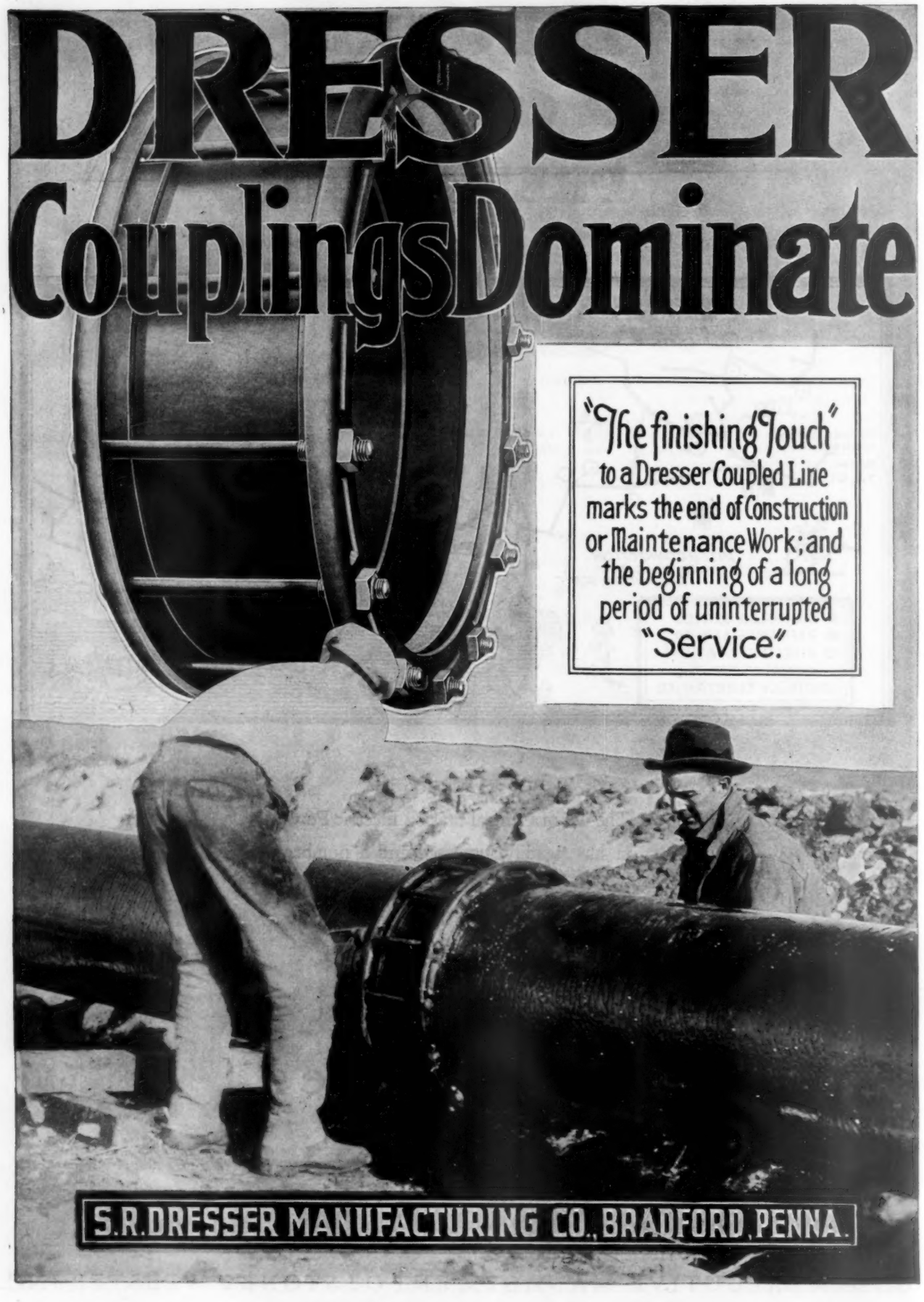
UNDER EXECUTIVE MANAGEMENT OF STONE & WEBSTER INC.

Say you saw it in The OIL WEEKLY

DRESSER Couplings Dominate



Say you saw it in The OIL WEEKLY

Natural Gas Men All Set For Big Convention

Attendance at Kansas City will determine future of Natural Gas Department

PITTSBURGH, Pa.—Everything is set for the big natural gas convention to be held in Kansas City, May 6 to 9, inclusive. In line with the usual custom, the Natural Gas Department, American Gas Association, has arranged a reduced rate of fare and a half on the certificate plan. A program of unusual interest has been completed and indicates that the papers and addresses will be extremely important and valuable to every natural gas man. A number of outstanding leaders of the natural gas industry are scheduled to speak, among them being W. A. Jones, chairman of the executive committee, Henry L. Doherty and Company; J. J. O'Brien, president, Byllesby Engineering and Management Corporation; H. C. Blackwell, president, The Union Gas and Electric Company; H. C. Abell, vice president, Electric Bond and Share Company; R. W. Gallagher, president, East Ohio Gas Company, and many other well known gas men.

Following is the complete program released by the Natural Gas Department:

Tuesday, May 7—10:30 A. M.

Invocation—Dr. Robert Nelson Spencer. Rector of Grace and Holy Trinity Episcopal Church.

Address of Welcome—Hon. A. I. Beach. Mayor of Kansas City.

Response and Address of the Chairman—S. W. Meals. Carnegie Natural Gas Company, Pittsburgh, Pennsylvania.

In Memoriam—John M. Garard. Ohio Fuel Gas Company, Columbus, Ohio.

Address—O. H. Fogg, President American Gas Association, New York City.

Address—The Future of Our Industry. W. A. Jones, Chairman of Executive Committee, Henry L. Doherty and Company, New York City.

Address—Alexander Forward, Managing Director American Gas Association, New York City.

Paper—Some Pipe Line and Transmission Problems. John C. Diehl, Metric Metal Works, Erie, Pennsylvania.

Tuesday, May 7—2:00 P. M.

Address—What Natural Gas Adds to the Wealth of a State. H. J. Hoover, Natural Gas Consultant, Cincinnati, Ohio.

Paper—Selling Domestic Gas. George Bowersox, Southern California Gas Company., Los Angeles, California.

Address—Changing Over a City's Gas Supply. H. C. Abell, Vice President, Electric Bond and Share Company, New York City.

What We Are Doing in Research—H. C. Cooper, Hope Natural Gas Company, Pittsburgh, Pennsylvania.

Measuring Large Volumes of Gas—T. R. Weymouth, Oklahoma Natural Gas Corporation, Tulsa, Oklahoma.

Flow Through Pipe Lines—H. D. Hancock, Henry L. Doherty and Company, New York City.

Paper—Industrial Sales. R. M. Redding, Dallas Gas Company, Dallas, Texas.

Wednesday, May 8—10:00 A. M.

Paper—Cracking Natural Gas. J. A. Yunker, Louisville Gas & Electric Company, Louisville, Kentucky.

Address—Facts Relating to Natural Gas Service. J. J. O'Brien, President, Byllesby Companies, Chicago, Illinois.

Paper—Distribution. E. A. Clark, Oklahoma Natural Gas Corporation, Tulsa, Oklahoma.

Moving Pictures—Putting Out Well Fires. M. M. Kinley, The M. M. Kinley Torpedo Company, Tulsa, Oklahoma.

Wednesday, May 8—2:00 P. M.

Address — The Gas Industry — A Giant Servant. R. W. Gallagher, President, The East Ohio Gas Company, Cleveland, Ohio.

Question Discussion

F. L. Chase of the Lone Star Gas Company, Dallas, Texas, will preside and the following questions will be open for general discussion:

1. In what form can news be best supplied to local newspapers?
2. What are the latest developments in the use of expansion joints on welded lines?
3. What are the best methods of covering or coating pipes to prevent corrosion?
4. What control methods are used for distribution system pressure regulation?
5. What distribution system changes are needed when changing from manufactured to natural gas?
6. What metering equipment is best for large industrial customs?
7. How can the volume of gas wells best be determined with the least waste of gas or danger to wells?

Thursday, May 9—10:00 A. M. ..

Some More Wrinkles—H. J. Struth, The Oil Weekly, Houston, Texas.

Paper—Natural Gas Research. N. A. C. Smith, Bureau of Mines, Bartlesville, Oklahoma.

Address—What the Public Expects of the Gas Industry. H. C. Blackwell, President, Union Gas & Electric Company, Cincinnati, Ohio.

Symposium—Selling to the Home. Mrs. Luella M. Fisher, Chairman, Home Service Committee, A. G. A., Erie, Pennsylvania.

Opening of Exhibition — Monday, May 6, 9:00 A. M.

Main Technical and Research Committee Meeting—Monday, May 6, 10:30 A. M.

Meeting of Managing and Advisory Committees — Monday, May 6, 4:30 P. M.

Smoker—Tuesday, May 7, 8:30 P. M.

Banquet—Wednesday, May 8, 6:30 P. M.

Ladies' Entertainments — Tuesday and Wednesday, May 7 and 8.

Delegates who will attend this important meeting are urged when purchasing going tickets to Kansas City, to be sure to request a certificate from the railroad ticket agent. Immediately upon arrival in Kansas City, this certificate must be validated by the endorsing officer at the registration desk. The selling dates are May 2-8, with May 13 as final limit of return.

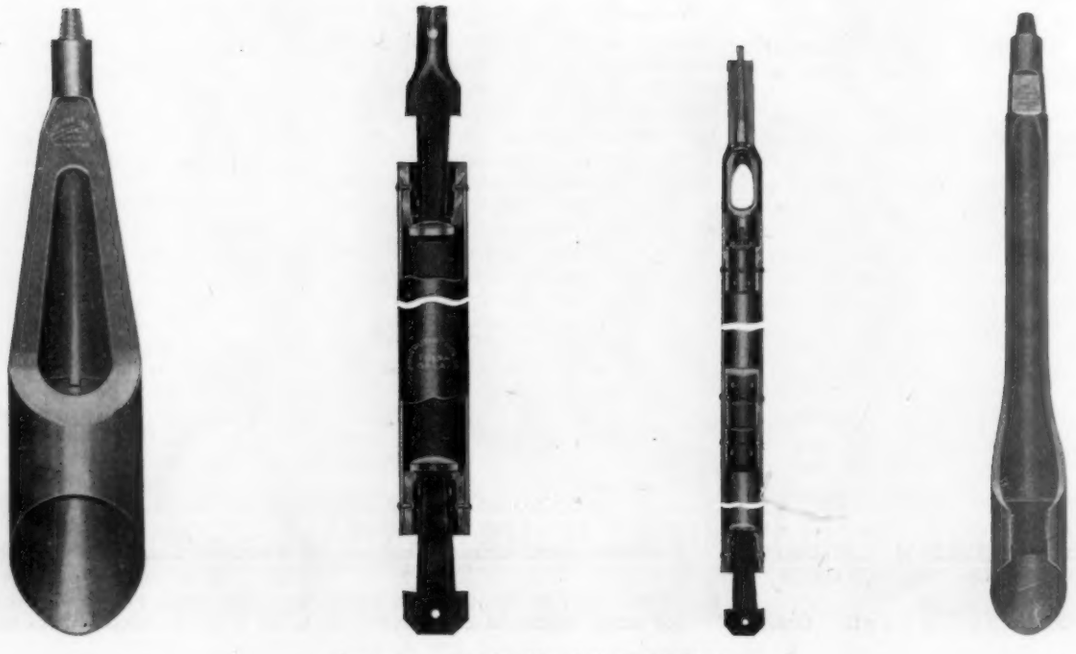
Equipment Exhibits

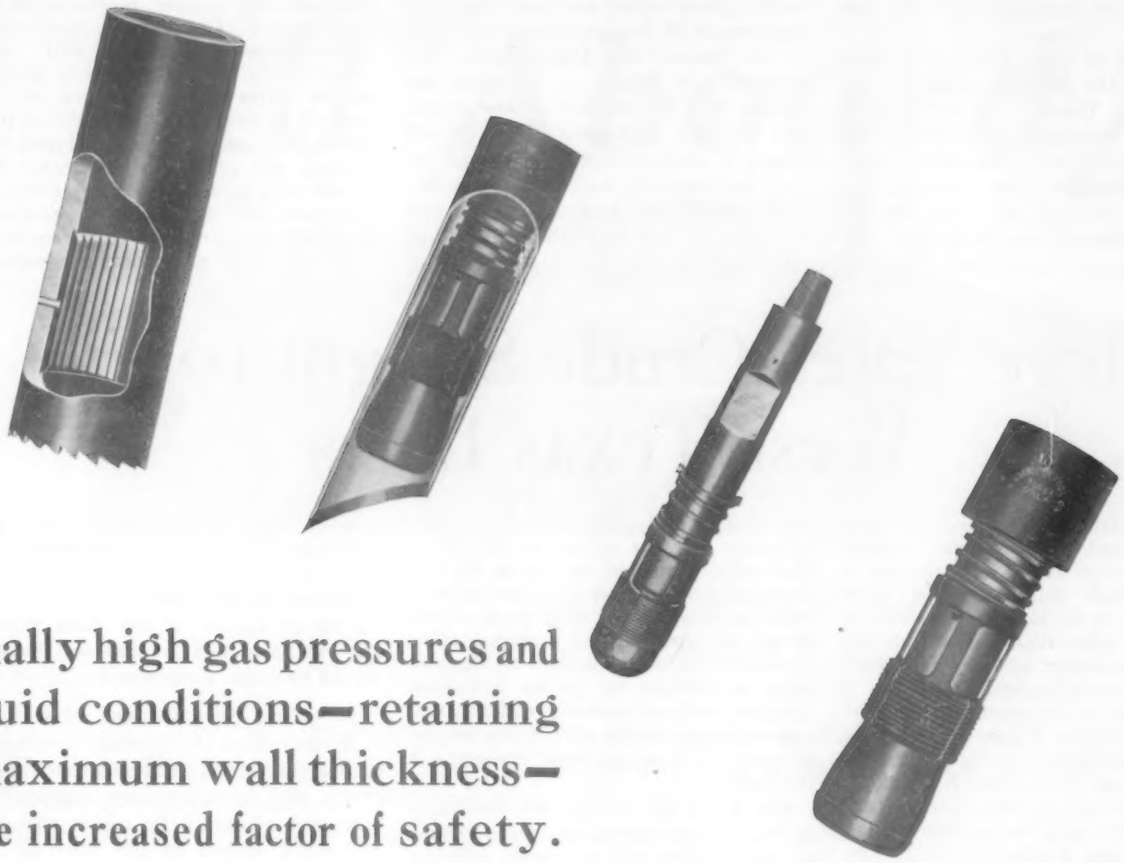
Officials of the Natural Gas Department are highly pleased over their prospects for a most successful exhibition of natural gas equipment and appliances. The exhibition will open on the morning of May 6 and will be unusually large and well diversified. The manufacturers of products to be displayed have expended large sums and effort to bring their wares to the attention of this centralized group of natural gas men and the association urges every delegate to be sure to give a part of his time and attention to this splendid showing of machinery and appliances. Many of the exhibits will reflect the great progress that is being made in the development of newer and

For the Gas Industry — especially designed, sturdy fishing tools, obtaining open holes under abnor-

HONEST

ROTARY





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Say you saw it in The OIL WEEKLY

more efficient equipment for the gas industry.

According to those who are in close touch with the internal affairs of the Natural Gas Department, the coming convention promises to be one of the most important ever held by the natural gas industry. The growing importance of natural gas, with the remarkable achievements of the past and the stupendous projected developments, place added emphasis upon the importance of holding future meetings of the Natural Gas Department. Undoubtedly, a number of important decisions will be reached at the executive sessions in Kansas City that will insure a continuation of separate annual meetings of the Natural Gas Department of the American Gas Association. At the last meeting held at Atlantic City, there was some talk of discontinuing annual meetings of the Natural Gas Department, some association members feeling that there should only be one combined meeting of the entire association each year, to be held at Atlantic City. Judging from the opposition that has developed concerning this plan, it is anticipated that a vote will be taken at Kansas City to determine whether or not the proposed plan will be acceptable to the membership consisting of natural gas men.

More Yates Crude Sought to Fill West Texas Lines

FORT WORTH, Texas.—With three major pipe line companies making formal requests for authorization to run more crude daily from the Yates field because of inability to offset decline in runs from other West Texas fields, the Yates field proration advisory committee will hold a special meeting here May 6 to take action on the standing request of the Mid-Kansas Oil & Gas Company for a boost of 12,500 barrels daily on its runs. Shell Petroleum Corporation is seeking a minimum increase of 5000 barrels daily from this field also for its carrier, the Shell Pipe Line Company, while The Texas Company is likewise earnestly soliciting oil for purchase in the field to help fill the 12-inch trunk line to be completed shortly by The Texas Pipe Line Company to the coast.

Allowable production in the Yates field is now 87,500 barrels daily, although an official order granting an allowance of 100,000 barrels daily was issued by the Texas Railroad Commission January 12, subject to the pipe line companies being able to handle the larger amount and meeting of the approval of the proration advisory committee. Officials of Mid-Kansas Oil & Gas Company made formal notification by wire to the various members of the latter committee and also the commission April 16 for the 12,500 barrel increase, but a minority vote by telegraph caused the matter to be held in abeyance until the special meeting of the committee convenes.

Simms to Fill Tanks

Actual production in the Yates field was scheduled to be increased about 5000 barrels daily beginning May 1 through Simms Petroleum Company (Simms Oil Company) having elected to withdraw that portion of its allowable production in the field from the market, and store same in three 55,000-barrel steel tanks for a better price. Officials of Simms Petroleum Company have expressed themselves as being satisfied that higher crude prices are now to be expected within a reasonable period in the West Texas district, and by anticipating same the company will materially profit on current production through the filling of idle tankage now on hand in the field. This storage plan is in keeping with Yates field proration rules as set up by the Texas Railroad Commission, as long as the producer electing to store oil does not produce in excess of the daily quota earned under the terms of the proration rules. However, the pipe line capacity temporarily surrendered by Simms Petroleum Company will automatically result in that amount being equally distributed as per proration rules among other producers in the field.

The Yates field is the only flush area in West Texas having any great volume of "uncontrolled oil" to market with assurance over a long period, since Winkler County and the Howard-Glasscock County deep pay horizons are rapidly fading out of the picture, and West Texas pipe lines that are dependent upon purchased oil for a portion of their load are naturally endeavoring to get better established for the future by seeking more Yates field connections. Gulf Production Company is in control of two separate West Texas areas—McElroy ranch, Crane County, and the O'Brien ranch, Ward County—that offer possibilities of a large flush output if drilled out, but the company is carrying out a conservative development program, and keeping the Gulf Pipe Line Company abundantly supplied with its allowable production in Winkler and Pecos Counties, with a surplus in each county going temporarily to other crude purchasers.

Gulf Production Company's production allowance in the Yates field is now averaging about 12,000 barrels daily, but Gulf Pipe Line Company is only running 9500 barrels daily of this amount, with the remaining 2500 barrels going to other purchasing companies in the field at the posted price of 65 cents per barrel. While no announcement has been made by officials, it is understood that Gulf Pipe Line Company will soon demand the right to run the remaining 2500 barrels of daily production held by Gulf Production Company, as additional pipe line capacity is being provided to permit heavier shipments on the Yates-McElroy-Midland trunk line through the addition of a 20-mile loop on the south end of the McElroy-Midland unit. The looping of this line, which will be increased from 25,000 to more than 32,000 barrels daily, was announced last week for immediate construction. In the event Gulf Pipe Line Company elects to handle and market all of its production in the Yates field, a corresponding loss in runs will be sustained by major companies buying oil.

Want Price Increase First

A movement is gaining momentum among the smaller producing units in the Yates field to oppose any requests for increased allowance by major pipe line companies wishing to run more oil for purchase after the field's output has reached the 100,000-barrel daily mark, until a reasonable increase in crude prices takes place. The smaller units voted for the 100,000-barrel daily maximum allowance in January, and have agreed to stick to it, but future increases must be accompanied by better price offers.

The current production of the Yates field is being handled by only four pipe line companies, and the 87,500 barrels daily is distributed approximately as follows:

Company	Daily Runs
Illinois Pipe Line Company	37,000
Humble Pipe Line Company	28,500
Shell Pipe Line Company	12,500
Gulf Pipe Line Company	9,500
Total	87,500

The above figures do not take into consideration the oil that is to be stored by Simms Petroleum Company. Humble Oil & Refining Company is in control of the marketing of more than one-half of the total daily output, as in addition to the oil handled by Humble Pipe Line Company, 30,000 barrels or more daily is being received at Lytle station, near San Antonio from the Illinois Pipe Line Company on a long time contract. Illinois Pipe Line Company is selling about 2500 barrels daily on contract to the Del Rio Refining Company, and is serving as a common carrier for the production held by the Grayburg Oil Company, making deliveries to the latter concern's Somerset field line at Lytle station. Grayburg Oil Company is refining this crude in its San Antonio plant.

FRANKLIN VALVELESS
OIL AND GAS ENGINES

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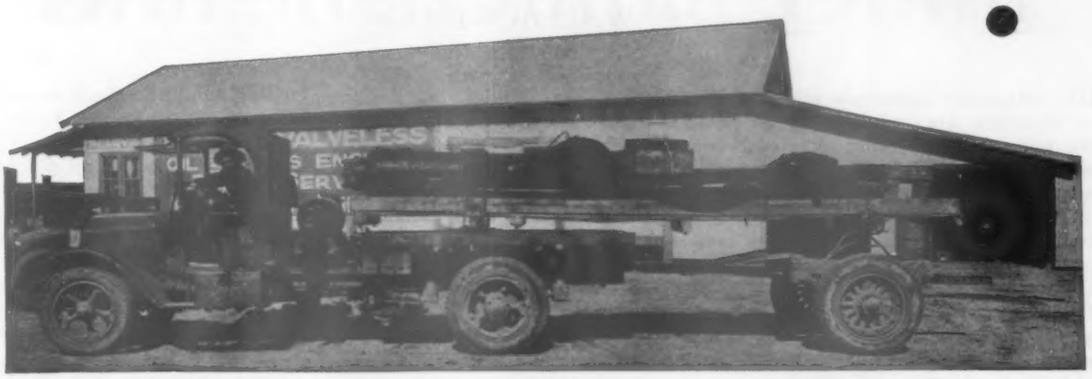

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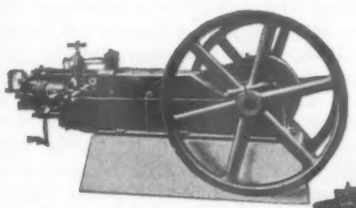
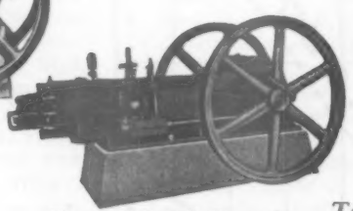
Yet, the best part of the Franklin is that you've got something when you get it set up. The Franklin Oil Drilling Engine has a fine record of performance. They show power, speed and flexibility.

The Franklin pumping engine displays a sturdiness that has gained many friends on the oil field. These pumpers come in 30, 40, 50 and 75 horsepower.



Type OF Oil Drilling Engine



Type AO Oil Pumping Engine

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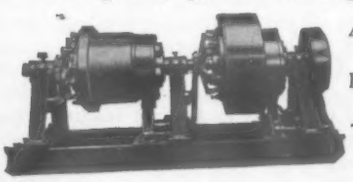
Two speeds in either forward or reverse—all bearings enclosed —run in oil or grease.

All brake band and clutch discs adjusted without stopping the engine.

All brackets, bell cranks, toggle arms, brake cranks, levers, driving discs, spiders and sliding sleeves made of steel.

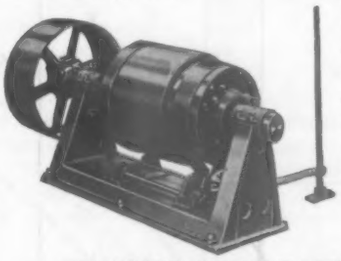


All similar parts of clutch interchangeable.

Belt driven — no shaft breakage.

The 2 SD Clutch will pull the largest bailer wthout faltering.

Type BG for Cable Tool Drilling, etc.



Here is a clutch that will operate satisfactorily and smoothly for cable tool drilling or for pumping operations. The BG type has one speed forward and reverse. It is much the same construction as the 2 SD clutch.

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Branches in All Oil Fields

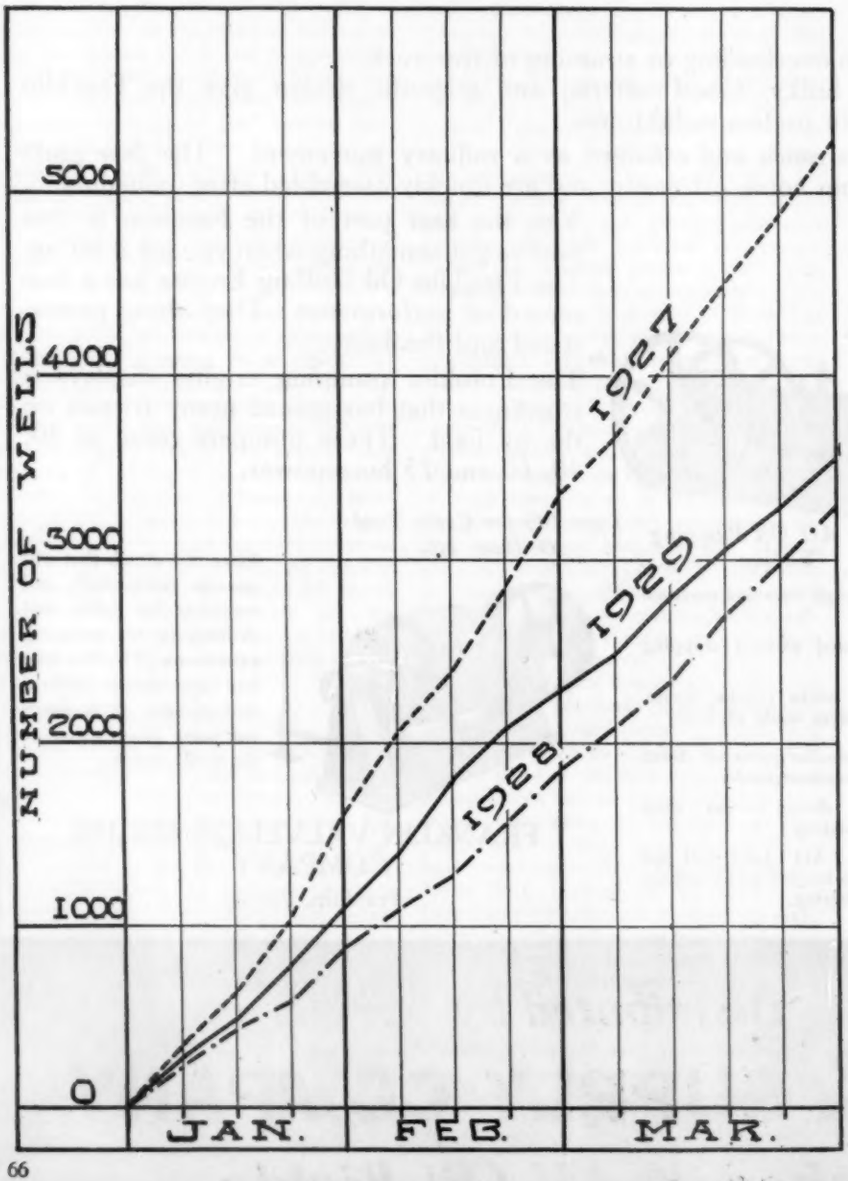
Permits Show Increase for First Quarter

By WALLACE DAVIS
Staff Representative

THE petroleum industry's efforts at economy are not evident in the amount of drilling started thus for in 1929. A survey revealing the laxity in recent field operations, which in this era of over-production opens room for criticism, indicates that the expenditure for new wells checked in 1928, as compared with the previous year, will not be held back in 1929.

Statistics disclose that the big production has followed the periods of heavy drilling regardless of concrete evidence of prolific new sources of oil being the outstanding determinent of over-production. Drilling permits ganted in the six leading crude producing states—Texas, Oklahoma, California, Kansas, Arkansas and Louisiana—comprise the major developments in this country which contribute to increased or decreased production. While 500 permits to drill in one year may result in more new recovery than all of the other permits granted in these six states, sufficient of the total number granted are for development of new highly potential areas that a comparison of rise and fall in permits serves as a valuable criterion.

It is apparent that if activity in 1929 were to show the decrease under 1928 that the latter year showed under 1927, the over-production situation now existing would be much sooner alleviated, not to mention the better immediate effect.



On the other hand field activity for the first quarter in 1929 has not only failed to hold the level attained in 1928, but has opened the year with an increase and consistently held the pace through the first three months. The accompanying chart shows the exact trend of drilling for the first quarter, during the past three years, reveals the heavy drilling in 1927 that followed development in Greater Seminole, the many new discoveries in West Texas and new deep horizon discoveries in California. The 1928 permit curve reveals the sharp cut in new drilling, chiefly resulting from measures to curb over-production. The 1929 curve, substantially over that of last year, indicates the trend of activity now under way, and scheduled for 1929.

While it is true that production at the close of 1928 still maintained an exceedingly high level, the close of the year was still recording production resulting from permits granted in 1927. The trend of production at the close of of 1928, excepting new output from then recent completions, was due to start its periodical decline. With the present trend of new drilling as a criterion, 1929 is slated for fairly heavy field activity. Results in the past would forecast that production following such a drilling campaign will be equally heavy, comparative to efforts to open new production.

With the present trend of new field activity it is apparent that the effective hand that proration will play this year will be in curbing production after well completions. If this is successfully accomplished, then little operating expense will be wasted as a direct result of present drilling. If wells now started and being completed are not controlled to lower production, the ill effect will continue two-fold—low price for oil the drilling in of which has added to the operators' expense.

During the first quarter of 1927 there were 5269 permits granted for drilling of locations in the six leading producing states of the country. This number was cut in the same period of 1928 to 3284. In the first quarter of 1929 drilling permits granted to producers numbered 3538.

The average barrel of oil now is worth approximately one-half of what it sold for at this time in 1926. There is now approximately twice as much being spent in drilling as at that time. Therein lies one interesting angle of the situation, and one suggestion on conservation.

California Curtailment Orders Bringing Output Down

By BRAD MILLS
Staff Representative

LOS ANGELES.—With the curtailment plan, as outlined by the Regional Committee of the American Petroleum Institute, actually in operation in California, the state has demonstrated that it is possible to bring townlot fields under the ban with the closely held, more remote districts.

A careful survey on Monday, April 29, showed that shut in production coming under the General Order No. 1, issued to become effective at 7 a. m. April 22, totaled about 55,000 barrels, with the cut back growing daily to approach the maximum reduction of 129,530 barrels outlined in the first order of Umpire F. C. van Deinse.

In arriving at the amount shut in on April 29, one week after the order became effective, many factors had to be considered. All of the major operators were in complete accord with the plan, and, therefore immediately started to cut back their wells to get the "feel" of the proration and to find the proper place to fix the individual well and lease production. There was some confusion and a few of the smaller operators were slow to get in motion.

At the beginning of the week, every field included in General Order No. 1, viz, all fields in the Los Angeles Basin and those lying outside of the San Joaquin Valley, had at least partially fallen in line and had shown a decline because of curtailment.

The one exception to this was the Elwood field, where the actual potential production is higher than field production and where the casing pressure is so high that a further pinching in of the wells without a careful study of conditions might lead to disaster. Field production is about 35,000 barrels, while potential production is fully 10,000 barrels more. Although under the order the allowable production is only 20,000 barrels, two good wells have been completed recently and the cut will be much sharper than anticipated. Both the Rio Grande Oil Company and Barnsdall Oil Company, only operators in the field, are heartily in accord with the curtailment plan and will cut the wells back as much as they will stand. The casing pressure is more than 1000 pounds and when the reduction is made it is expected to rise sharply. Engineers have been studying conditions in the field and when they have reported their findings immediate action will be taken.

Major operators control more than two-thirds of production at Santa Fe Springs, and since all of these companies have agreed to reduce production, at least 70 per cent. of the 50,000-barrel cut, to bring production to 125,000 barrels, will be made. During the first week the order was in effect, about 15,000 barrels was pinched in and this figure is growing rapidly. At least 25,000 barrels will be shut in by May 5 and it is believed that another 10,000 barrels will fall under the ban the following week.

Several factors are adding confusion to the proration at Santa Fe Springs. Potential production of some of the smaller companies has fallen below the average production of February, on which the General Order was based, giving these companies a right to produce at a maximum rate. On the other hand, new wells are coming in and these will be allowed to flow wide open at least 10 days. The new oil will give the field a ragged appearance and will nullify on the surface some of the good effects of curtailment.

SECOND ORDER

Los Angeles.—Umpire F. C. Van Deinse has issued General Order Number Two, calling for curtailment in all fields in California and to become effective May 4, at which time the order will supercede General Order Number 1.

The new order calls for a reduction of 10 per cent in all Northern fields, except Kettleman Hills which will be reduced 25 per cent. It also revises the allowable percentage in all southern fields to bring production to the original maximum.

General Order Number 2 contemplates a curtailment of about 143,000 barrels, based on the potential production of April 15.

George Otis Smith, head of the United States Geological Survey, met with operators and permittees in the Kettleman Hills field Monday to urge the adoption of a plan to curtail production in the district.

No definite action was taken but several plans were mentioned. Doctor Smith read a message from Secretary Wilbur which stated that the government considered the intensive development of the Kettleman Hills field a menace and mentioned that it might be possible for the government to take some definite action if there was proof that gas was being wasted or that the permit was not being developed along sensible lines.

The Meyer zone wells are being cut back 10 per cent., with the deep zone producers receiving a slice of about 28.5 per cent. Finding the correct figure has been a slow process both with the new deep wells and the shallow pumpers. In the former the decline is rapid, while in the latter many days of experimenting are required.

Reduction in the Long Beach field has been chiefly in the deep zone. The major operators, with one exception, religiously started to prorate their wells on April 22. Some of the smaller operators, especially those producing in the shallow zone, were reticent to cut back in the shallow wells. At the end of the first week, about 15,000 barrels of a possible 50,000 barrels had been shut in. The amount should be doubled within another week.

In the Seal Beach field, three large operators control the bulk of production. They fell rapidly in line and shut in about 10,000 barrels, of which the main part of the field accounted for nearly all. Production in this field has run rapidly upward during the past two months and it will be necessary to shut in a much larger amount.

The Ventura field has accounted for at least 2000 barrels of the state's shut in total and another 1000 barrels will be included under the curtailment order within another week. This field is controlled chiefly by three large companies and only time is required to bring the total to the proper level.

The smaller fields affected by the shut in order are complying with the program and account for a large percentage of the total. These fields and the amount of oil shut in on April 29 follows: Dominguez, 300 barrels; Fullerton-Brea, 1000 barrels; Coyote, 1100 barrels; Huntington Beach, 2500 barrels; Inglewood, 2000 barrels; Montebello, 300 barrels; Richfield, 1000 barrels; Santa Maria, 1000 barrels; Torrance, 1100 barrels; Whittier, 200 barrels.

An order affecting the San Joaquin Valley fields will be issued soon after May 1. This will give a further maximum reduction of 15,626 barrels.

Plans are being made to control production in the Kettleman Hills field and it is believed that this area will not cause a flood of oil in the immediate future.

When the curtailment plan is working smoothly in California, it is believed that considerably more than 100,000 barrels will have been shut in, in addition to that which has been shut in for two or three years, with a figure of 125,000 barrels possible.

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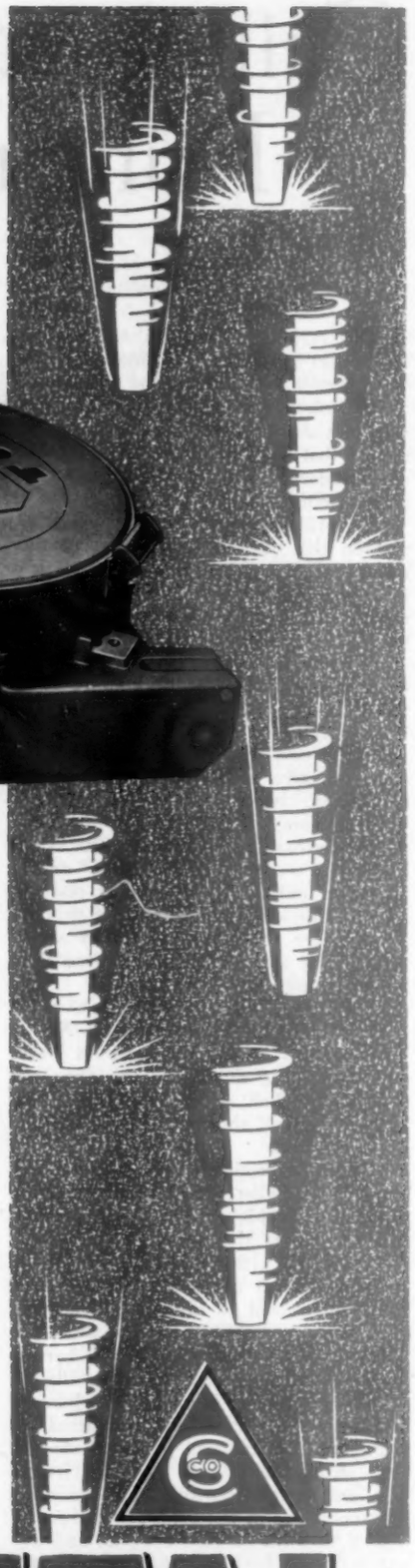

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CONTINENTAL

Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Refinery Demand Creating Seller's Market

THE curtailment movement is getting into full swing and although the decline in daily average crude production was only 21,200 barrels last week, considerably less than expectations, there are now definite signs that succeeding weeks will show a series of marked declines.

Both Oklahoma and California failed to show sizeable declines, as anticipated; Oklahoma's net decrease amounting to 10,300 barrels, while California registered a decrease of only 8900 barrels. In both states, a number of marked declines in flush areas were offset by sizeable gains in new areas. It is now apparent, however, that proration will show a material decrease in California's production, as advices from that state indicate a more unanimous movement among operators to lower their output. A late report from Los Angeles states that the present week will reveal a large decrease in California's production, with the possibility of a gradual decline which is expected to exceed 100,000 barrels with the next few weeks.

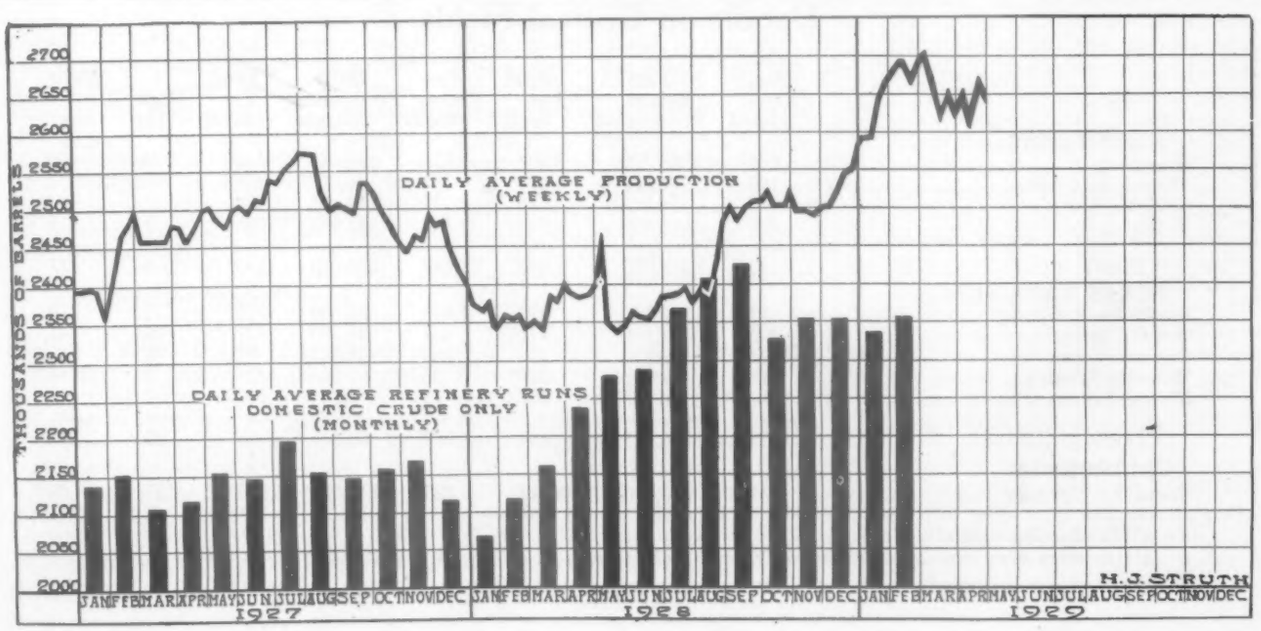
Judging from reports being received from various important producing areas, the crude market is unmistakably becoming a seller's market. An unusually heavy demand for crude, particularly light grades, in Oklahoma, West Texas and California has resulted in the payment of premiums, which practically amount to an advance of from 10 to 20 cents a barrel in a number of the major districts. There seems to be an inclination on the part of the big companies owning large stocks of crude to hold these stocks and supply the demand from current production. This is causing many to believe that an advance in posted prices will soon become evident. This is being accentuated also by the posting of advances in Central Western crudes, by the Ohio Oil Company, advances in Canadian crude by the Imperial Oil Company, and the posting of higher prices in a number of Oklahoma high gravity crudes

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH AVERAGE OF 1928

	Daily Average Year 1928 (Bureau of Mines Data)	Daily Average April 27,1929 A. P. I. Wkly Prod. Rept.)	Excess
Oklahoma-Kansas	786,585	773,150	[1]13,435
Texas-Louisiana-Arkansas	849,205	912,750	63,545
California	633,831	787,700	153,869
Balance of United States	190,391	177,150	[1]13,241
Total United States	2,460,012	2,650,650	190,638
Mexico-Central and South America	561,339	609,249[2]	47,910
Grand total	3,021,351	3,259,899	238,548

[1]Bold figures indicate below 1928 average. [2]As of March 30—latest date available.

DOMESTIC PRODUCTION AND REFINERY RUNS



by the Champlin Refining Company.

The only discouraging aspect at this time is the unwarranted belief that a higher crude market is in prospect at an early date. As a matter of fact, about the worst thing that could happen now would be to increase the price of crude in flush areas. Since aggregate stock figures for the United States reveal an abundant supply of crude in storage, there is really no sound reason for the belief that there is a shortage. What is really happening is that the fellows who have large supplies of crude are reluctant to part with it, because they are confident of appreciating crude values at some future date. To further complicate this situation, there are a number of large companies that desire to establish crude supply connections with producers and they are offering premiums to further their own interests. What this situation does indicate, however, is that many of the large holders of crude are willing to gamble on an ultimate advance in the crude market, proving the courage of their convictions that the trend of production is tending toward equilibrium. This would indicate that improvement is in store, but does not necessarily mean that an immediate advance in crude prices is justified. The only way to accomplish this desire is to continue to curtail production until it hurts. The sooner the industry can show a decline in output of sizeable proportions, the sooner will the price of oil reflect that condition. Artificial shortages cannot create a higher crude market, other than to force some buyers to pay a premium for that which they are otherwise unable to procure.

Excess Over Last Year

The excess of production last week, over the daily average of 1928, stood at 190,638 barrels a day. California and Texas still hold the situation in an unfavorable balance. However, the next two weeks should create an entirely different picture, with anticipated realization of a sharp drop in California's output and a resumption of the downward trend in Oklahoma and Texas. In reality, there were some marked declines in practically all sections of the country last week, the aggregate of these declines amounting to 55,550 barrels. These were offset, however, by increases sufficient to pare the net decline to 21,200 barrels.

Oklahoma crude production ruled lower in the majority of the important fields, the only increases occuring in Searight, Tonkawa, Wewoka, Maud, Mission, and in wildcat territory. Among the more important declines recorded were St. Louis, 7550 barrels; Bowlegs, 2000 barrels; Seminole, 1750 barrels and Little River, 1450 barrels. The net decline amounted to 10,300 barrels, while Kansas registered a slight increase of 750 barrels.

Oklahoma Premium

Higher prices for the choice Oklahoma crudes became a reality last week, when the Champlin Refining Company of Enid posted an advance of 20 cents a barrel on oil from the Garber, Tonkawa, Lovell, Billings, Watchorn and Thomas fields.

The Champlin Refining Company is posting its figures in order to discourage reports to the effect that it is paying a "premium" for these oils. The company has a refinery of 20,000 barrels daily capacity and a pipe line system connecting with these fields. It has for several years run largely on the higher gravity crudes of this section and frequently in the past has paid more than the posted price for these oils.

The posting places 25 to 25.9 gravity crude to 86 cents a barrel, with a six-cent differential for each gravity point up to 32.9. The 33 to 33.9 oil is posted at $1.31 a barrel, with a three-cent differential for grades above, bringing 44 gravity crude to $1.64 a barrel.

The crude situation is changing somewhat in some districts. In a few instances buyers are seeking crudes that have high lubricating oil content. Some Burbank crude is under competition on this score.

Some oil is being drawn from storage by a few concerns. There is, however, a tendency to hold the stored oil and take care of current runs from current buyings. The larger purchasers seem bent on holding stored oil to await the day when it will show profit. Since they have high deliveries through pipe lines, they are active after connections to take care of current requirements.

U. S. Motor gasoline has ranged from 7¼ to 7½ cents over the week, with the demand good.

Refiners are increasing runs, despite heavy storage, piled up through the fall and winter. Evidently the opinion is that demands of the spring and summer will deplete storage to a satisfactory figure.

West Texas Curtailment Real

West Texas operators continue to demonstrated that they are in earnest about carrying through curtailment efforts. Evidence of this is particularly noticeable in the Yates field, where a majority of the operators have voiced strenuous objection to increase daily allowances of individual companies. Apparently, some of the large companies are finding it difficult to meet the demand on their present allowances and have attempted to gain permission to increase their output. However, these attempts have been blocked by the opposition of members of the Yates advisory committee. The combined West Texas area registered a net decline of 700 barrels last week, although the Yates field was credited with a decline of 3700 barrels a day. This was offset, however, by an increase of 5150 barrels in Winkler

Details on Critical Fields

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Prod. Per Well	Rigs Up	Wells Drilling
WEST TEXAS—								
Hendrick	569	3,016,580	5,302	576	139,655	242[1]	4	24
Church & Fields	189	203,465	1,077	187	26,025	139	--	--
Gulf-McElroy	72	56,615	786	71	12,605	178	1	2
Yates	310	2,026,250	6,536	304	92,585	305[1]	3	5
Totals	1,140	5,302,910	4,652	1,138	270,870	238	8	31
TEXAS PANHANDLE—								
Hutchinson County	1,157	550,770	476	1,010	25,590	25	2	19
Gray County	350	145,570	416	337	25,785	77	13	45
Carson County	192	62,635	326	162	6,685	41	6	17
Wheeler County	45	14,775	328	36	660	18	4	6
Moore County	14	6,765	483	12	1,785	149	1	7
Totals	1,758	780,515	444	1,557	60,505	39	26	94
CALIFORNIA—								
Santa Fe Springs[2]	176	553,000	3,142	129	135,000	1,046	25	165

([1]) Production partially pinched.
([2]) Includes deep zone production only. For field total add 230 wells and 25,000 barrels.

County's production. Declines in other fields in West Texas resulted in a net decline for this area. A decline was also registered in the Salt Flat field, in Southwest Texas, last week, but a sharp increase in the Coastal area of 6450 barrels, credited mostly to Pierce Junction, resulted in an increase for Texas of 2700 barrels. With the coming of Tidal Refining Company into the West Texas area, having acquired the Church and Fields crude gathering system of the Southern Pipe Line Company, West Texas crude will undoubtedly move through the Texas Pipe Line Company line to the big Tidewater plant on the Atlantic Seaboard. Competition for crude in this area seems to be getting more pronounced, as it is understood that several of the large companies are actively bidding for long-time supplies.

Rocky Mountain Down

In line with declines recorded in other sections of the country, the Rocky Mountain area registered a net decrease of 7150 barrels in daily average production last week. The Salt Creek field, Wyoming, was mainly responsible for this, a decline of nearly 10,000 barrels occuring there. Arkansas also showed a decline of 1200 barrels, but North Louisiana, South South Louisiana and Eastern States piled up an aggregate increase of 2900 barrels.

While California failed to record a decline of sizeable proportions, as was confidently anticipated, there is no doubt but that the present week will show a decrease that will more than offset the slow start following the launching of the proration order. At any rate, the following declines were recorded in the leading fields: Long Beach, 9500 barrels; Huntington Beach, 2500 barrels; Inglewood, 2000 barrels and Seal Beach, 7500 barrels. Offsetting these declines were increases of 10,000 barrels at Santa Fe Springs and 3500 barrels at Elwood, the net decline for the state amounting to 8900 barrels. The fact that there was a gain at all in Santa Fe Springs production was somewhat of a surprise, as it was anticipated that this field would be the first to be affected by the proration order. Advices from California, however, point out that the curtailment movement was rather slow in getting started, because in many instances it was necessary to study the effect of shutting in big producers. It was pointed out also that most of the large companies have begun to cut their production in earnest and the effect would soon become apparent in the state production figures.

California "Spots" Short

As in the case of fields east of California, this state is also experiencing a "shortage" of oil in the open market. At least two large companies are said to be short of crude and are having trouble to obtain their daily requirements. Spot crude is commanding a premium in the open market of 10 to 15 cents a barrel, and, apparently, operators are having no difficulty in making contracts at prevailing posted prices. The fact that there is a possibility of cutting crude production 100,000 barrels by the end of this week, seems to have let loose a considerable amount of optimism over the immediate future of the California crude market. As has been pointed out in a foregoing paragraph, there is still much to be done in the way of reducing production before we can begin to realize any material benefit, marketwise. This applies equally to California and all other flush areas. Again it is pointed out that there is no sign of a crude shortage, if the Bureau of Mines reports are any criterion, and it would be an act of folly to boost the crude market because of an artificial shortage that seems to be affecting a minority of the companies in the market. The entire industry is greatly interested in the outcome of proration in California and confidently anticipates radical improvement there within the next few weeks. When California's production ebbs to the desired level, and the demand begins to make inroads into crude stocks, there will undoubtedly be some market improvement. Of primary concern now, however, is the ability of California to save the day for the industry at large. At least, the fact that the big companies are reluctant to sell their stored crude, is a sign that they believe in the curtailment movement and are confident of its success and an ultimately more profitable crude market. There is need for caution now, more than ever, as a stabilized market will be the only solution to making curtailment a permanent cure for the industry's ills.

Late in March, a major California company contracted with the Japanese navy to furnish a large amount of fuel oil, up to good specifications, over a period, at 57½ cents. United States Navy bids for fuel oil requirements for the next fiscal year were opened April 20, and it develops that West Coast requirements for fuel oil alone will run around 5,700,000 barrels. Of this total, 3,500,000 barrels will be taken at San Pedro, Los Angeles Harbor. Richfield Oil Company bid 73½ cents a barrel on the San Pedro requirements while the same company big 78 cents at San Francisco. Union Oil Company bid lowest for requirements at San Diego at 78½ cents. Union Oil Company's bid on San Pedro fuel was 74½ cents. Hancock Oil Company was low bidder on furnishing 100,000 barrels of Diesel oil at 88 cents with General Petroleum Corporation bidding 95 cents.

The navy bids clearly indicate a better feeling among the sellers of fuel oil, indicating that they feel that the corner has been turned, and they want their fuel oil to share a portion of the burden with gasoline.

Gasoline buyers, for export, want to pay only 7 to 7¼ cents for U. S. motor, while sellers are demanding 7½ cents, or one cent under the Gulf export price, which this week was 8½ cents. It is rumored that one contract is about to be placed in California for several million gallons of U. S. motor to be moved in tankers over a period, at 1¼ cents under the Gulf export price. This deal will likely be closed next week. Many sellers are convinced that if they can hold off another four or five weeks, they will be able to sell their U. S. motor at 8 cents or better.

Gasoline is moving to out of California at 8 to 8½ cents.

Tidal Arranging Handling of West Texas Crude

Houston, Texas.—West Texas crudes will probably be used most extensively in the 15,000 barrel refinery to be erected promptly by the Tidal Refining Company, subsidiary of the Tidewater-Associated Oil Company, on a 700-acre site fronting the Houston Ship Channel, as arrangements have been made for common carrier movement from West Texas fields by The Texas Pipe Line Company's 12-inch trunk line, which is to be completed within a month or six weeks. Announcement of the refinery project was made here by officials of the Tidal Refining Company early last week, and an organization is being assembled to start construction work at an early date.

The initial move towards arranging for a crude supply for the proposed refinery was started about April 1 when the Tidal Refining Company acquired the field gathering system and a 55,000 barrel storage tank owned by the Southern Pipe Line Company in the Church & Fields area, West Texas. This system was purchased to gather the 4,000 barrels of settled production held on a 50-50 basis by the Tidal Oil Company, producing subsidiary of the Tidewater-Associated Oil Company, and Turman-Maxwell Interests, with the former operating the property and in control of the production. Humble Pipe Line Company has been running this oil for purchase, but connections are to be severed to start filling the big tank until common carrier shipments are available over The Texas Pipe Line Company's line. Tidal Oil Company has small pumpers in Upton, Howard and Mitchell Counties, aggregating about 100 barrels daily, and the oil produced in the former county would be within reach of the carrier.

Tidal Refining Company placed a representative—Luther Smith—in the West Texas district late last summer, with headquarters at Midland, and at the same time obtained a permit to transact business in the state under the former name. Study has been made of the crude situation in the above district in the meantime, while exhaustive refinery tests have been made by the Bayonne, N. J., plant of the Tidewater Oil Company on West Texas crudes purchased in tanker lots, including some purchases recently from Magnolia Petroleum Company.

Bridgeport Machine Company is opening the first supply store at McPherson, Kansas. This indicates the northward spread of the central Kansas play.

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United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1928	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
January	675,450	108,300	523,300	125,450	45,250	90,050	109,600	77,000	617,100	2,371,500	73,516,500
February	664,450	110,550	538,750	115,800	45,300	88,250	104,850	75,550	614,750	2,358,250	68,388,850
March	646,850	112,250	575,850	119,900	44,400	85,600	102,150	78,700	617,450	2,383,150	73,877,650
April	620,450	112,150	617,850	118,850	46,900	83,450	107,000	78,500	613,550	2,398,700	71,961,100
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
December	710,600	97,200	603,700	135,050	37,300	81,350	113,450	74,600	697,850	2,551,100	79,084,400
1929											
January	722,550	97,150	632,500	136,750	36,650	78,600	111,950	73,200	747,250	2,635,600	81,703,600
February	714,800	95,950	643,350	142,300	35,700	74,600	108,550	71,750	797,800	2,684,800	75,204,400
March	666,500	95,500	662,500	147,750	35,800	74,250	108,850	70,400	786,000	2,647,400	82,068,350
April 6	673,700	97,850	668,250	150,850	35,500	73,100	110,250	71,350	777,200	2,658,100	18,606,700
April 13	648,400	105,350	644,700	154,500	35,600	72,800	110,500	67,100	776,200	2,615,050	18,305,350
April 20	673,700	109,100	649,300	150,450	35,600	73,500	110,750	72,950	796,600	2,671,850	18,702,950
April 27	663,300	109,850	645,550	159,250	35,650	72,300	111,250	65,800	787,700	2,650,650	18,554,550
Increase	.....	.....	750	.....	8,800	50	.....	500	.....	.....	.....	.....
Decrease	10,400	.....	3,750	.....	.....	200	.....	7,150	8,900	21,200	148,400

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	April 27	April 20
Carson County	6,550	6,500
Gray County	25,800	28,700
Hutchinson County	25,150	26,300
Wheeler County	650	650
Others	1,850	1,900
Total	60,000	64,050

NORTH TEXAS

Archer County	16,700	16,650
Burkburnett	8,950	9,050
Electra	12,700	12,800
Iowa Park-KMA	5,300	5,150
Montague and Cooke Cos.	13,000	12,550
Wilbarger	27,250	26,650
Others	500	500
Total	84,400	83,350

WEST CENTRAL TEXAS

Brown County	8,400	8,550
Callahan County	4,000	3,900
Coleman County	3,600	3,600
Eastland-Desdemona	6,500	6,800
Jack County	1,950	1,600
Palo Pinto County	400	400
Shackelford County	13,200	13,300
Stephens County	6,300	6,300
Throckmorton County	700	650
Young County	6,750	6,700
Others	700	700
Total	52,500	52,500

WEST TEXAS

Crane-Upton Counties	47,600	48,850
Crockett County	2,200	2,150
Howard County	46,350	45,650
Jones County	5,650	5,850
Mitchell-Scurry Cos.	2,750	2,600
Pecos County	88,500	92,200
Reagan County	18,800	19,150
Winkler County	144,150	139,000
Others	2,200	2,050
Total	358,200	357,500

EAST CENTRAL TEXAS

Boggy Creek	2,800	2,900
Corsicana-Powell	8,000	8,100
Currie	500	500
Mexia	5,300	5,400
Nigger Creek	600	600
Richland	400	400
Wortham	1,100	1,150
Total	18,700	19,050

SOUTHWEST TEXAS

Dale	500	550
Laredo District	11,950	11,550
Luling	12,000	12,300
Lytton Springs	1,000	1,000
Somerset	1,300	1,100
Salt Flat	40,450	41,400
Others	4,550	4,950
Total	71,750	72,850
T'tl Tex. (Outside Gulf Coast)	645,550	649,300

TEXAS GULF COAST

Barbers Hill	9,450	10,150
Batson	1,500	1,500
Big Creek	2,900	2,950
Blue Ridge	4,000	3,300
Boling	2,000	2,000
Damon Mound	700	700
Goose Creek	6,100	6,200
Hull	9,100	9,300
Humble	7,400	7,000
Orange County	2,950	2,800
Pierce Junction	21,110	15,850
Raccoon Bend	3,650	2,550
Saratoga	1,000	1,000
Sour Lake	2,700	2,700
South Liberty	5,400	5,550
Spindle Top	32,600	31,650
Sugar Land	11,000	11,600
West Columbia	6,500	6,000
Washington Co.	2,900	3,250
Others	4,650	5,100
Total	137,600	131,150
Texas Total	783,150	780,450

OKLAHOMA

Braman	3,400	3,400
Logan Co.	10,900	11,000
Blackwell	3,950	3,950
Hubbard	2,000	2,000
Thomas	800	850
Tonkawa	10,400	10,350
Garber	5,550	5,850
Burbank	20,950	21,200
Osage (outside Burbank)	24,850	25,050
Cushing	20,600	20,650
Yale Jennings	7,100	7,150
Davenport	1,500	1,500
Bristow Slick	19,650	19,650
North Okmulgee	13,700	13,750
Lyons Deaner	7,900	8,000
Cromwell	7,900	7,900
Papoose	3,350	3,350
Wewoka	4,900	4,850
Seminole	32,350	34,100
Bowlegs	32,950	34,950
Searight	11,550	9,500
Little River	72,350	73,800
Earlsboro	60,200	60,900
Duncan District	6,450	6,450
Graham	4,250	4,300
Fox	1,450	1,450
Healdton	13,050	13,100
Hewitt	8,100	8,150
Scholem Alechem	12,950	13,000
Pearson	2,200	2,450
St. Louis	99,750	107,300
Allen	25,750	26,300
Maud	28,900	28,650
Mission	30,300	29,450
Okla. City	3,250	3,350
Others	48,100	45,950
Total	663,300	673,600

CALIFORNIA

Santa Fe Springs	170,000	160,000
Long Beach	180,000	189,500
Huntington Beach	44,000	46,500
Torrance	14,000	14,500
Dominguez	10,500	10,500
Rosecrans	6,700	7,000
Inglewood	23,500	25,500
Midway-Sunset	72,500	72,500
Ventura Avenue	56,500	56,500
Seal Beach	41,000	48,500
Elwood-Goleta	35,000	31,500
Kettleman Hills	3,500	3,500
Others	130,500	130,600
Total	787,700	796,600

KANSAS

Greenwood County	20,100	20,300
Florence-Covert	1,000	1,000
Peabody-Ebling	2,750	2,750
Eldorado-Towanda	12,750	12,800
Augusta-Fox Bush	2,950	2,950
Rainbow Bend	1,000	1,000
Russell	3,300	3,250
Churchill	6,900	7,200
Oxford	5,050	5,250
Sedgwick	26,250	24,600
Others	27,800	28,000
Total	109,850	109,100

NORTH LOUISIANA

	April 27	April 20
Homer	4,050	4,050
Haynesville	5,350	5,350
Caddo Light	8,200	8,100
Caddo Heavy	3,250	3,150
DeSoto-Red River	3,900	3,950
Elm Grove	550	600
Bellevue	700	700
Cotton Valley	3,000	3,050
Urania	5,900	5,900
Pleasant Hill	500	500
Others	250	250
Total N. Louisiana	35,650	35,600

LOUISIANA GULF COAST

Bayou Bouillon	250	250
East Hackberry	2,650	2,800
Hackberry	4,350	3,600
Edgerly	800	800
Evangeline	800	800
Lockport	4,200	3,400
Sorrento	350	350
Sulphur Dome	3,300	2,400
Sweet Lake	400	400
Vinton	4,100	4,000
Others	500	500
Total Louisiana Gulf Coast	21,650	19,300
Louisiana Total	57,300	54,900

ARKANSAS

El Dorado	4,700	4,800
Champagnolle	8,650	10,400
Smackover Light	6,200	6,200
Smackover Heavy	49,100	48,450
Stephens	1,000	1,000
Nevada	1,200	1,200
Libson	1,350	1,350
Others	100	100
Total	72,300	73,500

MOUNTAIN STATES

WYOMING

Salt Creek	25,150	35,350
Grass Creek	2,250	2,300
Elk Basin	800	850
Big Muddy	2,400	2,300
Lost Soldier	3,300	3,300
Rock River	2,500	2,550
Lance Creek	250	250
Oregon Basin	2,350	2,350
La Barge	1,800	1,750
Others	3,350	2,650
Total	46,150	53,650

MONTANA

Cat Creek	1,400	1,400
Sunburst	6,500	5,300
Pondera	3,000	2,750
Others	100	100
Total	11,000	9,550

COLORADO

Moffats (Craig)	950	1,000
Fort Collins	2,450	2,550
Florence	1,050	1,050
Others	1,800	1,800
Total	6,250	6,400

NEW MEXICO

Table Mesa	....	450
Artesia	900	900
Hogback	250	250
Rattlesnake	850	1,350
Others	400	400
Total	2,400	3,350
Totals Mountain States	65,800	72,950

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.)	111,250	110,750

PRODUCTION SUMMARY

East of Rockies	1,797,150	1,802,300
Total U. S.	2,650,650	2,671,850

If you want more *pleasure* out of motoring put more care into selecting *gasoline* ....

IF you think of motoring as more than mere transportation—if, to you, it is the happiest of outdoor sports—then, by all means, stop and look into Sinclair "Three-Gas" Service!

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Gives Higher Compression . . . Stops Knocks . . . Better Low-Gear Performance

Economy and Mileage . . . Full of Eager Power

SINCLAIR "*Three Gas*" SERVICE

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A gas for every motoring need—let us help you get SUPERIOR ENGINE PERFORMANCE

SINCLAIR REFINING COMPANY, INC., 45 NASSAU STREET, NEW YORK ATLANTA BOSTON CHICAGO HOUSTON KANSAS CITY

CRUDE OIL PRICE QUOTATIONS

Revised April 30, 1929

CRUDE PRICE CHANGES

Effective April 26, Ohio Oil Company advanced Illinois, Princeton, Lima-Indiana and Western Kentucky crudes 15 cents a barrel and Wooster crude 13 cents a barrel. On the same date, Canadian crude was advanced 15 cents a barrel, making the new Petrolia price $2.05 and Oil Springs $2.12.

Independent of other companies in the Mid-Continent field, the Champlin Refining Company posted an advance of 20 cents a barrel on oil from the Garber, Tonkawa, Lovell, Billings, Watchorn and Thomas fields.

EASTERN STATES

(Effective March 12, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$4.10
Brandford District Oil in National Transit Lines (Pennsylvania)	4.10
Penna Grade Oil in National Transit Lines (Pennsylvania)	4.00
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	4.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	3.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.35
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.75
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.50
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	.60
Keister (Pennsylvania)	1.20

CENTRAL STATES

(Effective April 26, 1929)
Posted by Ohio Oil Co.

Illinois	1.60
Indiana	1.42
Lima	1.65
Plymouth	1.18
Princeton	1.60
Waterloo	1.25
Wooster	1.75

MID-CONTINENT

(Effective January 24, 1929)
Magnolia Petroleum Company

Under 26	.60
26 to 26.9 gravity	.65
27 to 27.9 gravity	.70
28 to 28.9 gravity	.75
29 to 29.9 gravity	.80
30 to 30.9 gravity	.90
31 to 31.9 gravity	1.00
32 to 32.9 gravity	1.08

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

MID-CONTINENT

(Effective January 25, 1929)
Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company.

25 to 25.9gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

WESTERN KENTUCKY

All grades	1.68

PANHANDLE

(Effective January 24, 1929)

GRAY COUNTY

(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company and Sinclair Pipe Line Company).

Below 29 gravity	.69
29 to 29.9 gravity	.75
30 to 30.9 gravity	.81
31 to 31.9 gravity	.87
32 to 32.9 gravity	.93
33 to 33.9 gravity	.96
34 to 34.9 gravity	.99
35 to 35.9 gravity	1.02
36 to 36.9 gravity	1.05
37 to 37.9 gravity	1.08
38 to 38.9 gravity	1.11
39 to 39.9 gravity	1.14
40 to 40.9 gravity	1.17
41 to 41.9 gravity	1.20
42 to 42.9 gravity	1.23
43 to 43.9 gravity	1.26
44 and above	1.29

WHEELER COUNTY

(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.70
30 to 30.9 gravity	76
31 to 31.9 gravity	.82
32 to 32.9 gravity	.88
33 to 33.9 gravity	.91
34 to 34.9 gravity	.94
35 to 35.9 gravity	.97
36 to 36.9 gravity	1.00
37 to 37.9 gravity	1.03
38 to 38.9 gravity	1.06
39 to 39.9 gravity	1.09
40 to 40.9 gravity	1.12
41 to 41.9 gravity	1.15
42 to 42.9 gravity	1.18
43 to 43.9 gravity	1.21
44 and above	1.24

CARSON-HUTCHINSON COUNTIES

(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.72
32 to 32.9 gravity	.78
33 to 33.9 gravity	.81
34 to 34.9 gravity	.84
35 to 35.9 gravity	.87
36 to 36.9 gravity	.90
37 to 37.9 gravity	.93
38 to 38.9 gravity	.96
39 to 39.9 gravity	.99
40 to 40.9 gravity	1.02
41 to 41.9 gravity	1.05
42 to 42.9 gravity	1.08
43 to 43.9 gravity	1.11
44 and above	1.14

WEST TEXAS

(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Pecos and Winkler Counties, all grades	.65

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

CALIFORNIA CRUDE OIL PRICES AT THE WELL

(EFFECTIVE JANUARY 18, 1929)

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons infields indicated)

Gravity	Ventura *	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood † Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elks Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .85	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17.9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18.9	.85	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19.9	.85	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20.9	.85	.85	.85	.85	.85	.85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21.9	.86	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22.9	.87	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	.80
23-23.9	.90	.97	.97	.97	.97	.97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24.9	.94	1.01	1.01	1.01	1.01	1.01	1.01	..	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25.9	.98	1.05	1.05	1.05	1.05	1.05	1.05	..	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26.9	1.02	1.09	1.09	1.09	1.09	1.09	1.09	..	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27.9	1.06	1.13	1.13	1.13	1.13	1.13	1.13	..	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28.9	1.10	1.17	1.17	1.17	1.17	1.17	1.17	..	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29.9	1.14	1.21	1.21	1.21	..	1.21	1.21	..	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30.9	1.18	1.25	1.25	1.25	..	1.25	1.25	..	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31.9	1.23	1.30	1.30	1.30	..	..	1.30	..	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32.0	1.28	1.35	1.35	1.35	..	..	1.35	..	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
32-32.9		..	..	..	..	..	1.41	..	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34.9		..	..	..	..	..	1.47	1.16	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35.9		..	..	..	..	..	1.53	1.22	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36.9		..	..	..	..	..	1.59	1.28	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37.9		..	..	..	..	..	1.65	1.34	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38.9		..	..	..	..	..	1.71	1.40	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39.9		..	..	..	..	..	1.77	1.46	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40.9		..	..	..	..	..	1.83	1.52	..	..	..	..	..	..	..	..	..	..	..	..
41-41.9		..	..	..	..	..	1.89	1.58	..	..	..	..	..	..	..	..	..	..	..	..
42-42.9		..	..	..	..	..	1.95	1.64	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degree Gravity and above $1.65 per barrel. *Union Oil Company. †Changed March 18, 1929.

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 75*)

(Magnolia Petroleum Company)
(Effective January 24, 1929)

Mitchell County	$ .65
Howard-Glasscock County (shallow)	.65
Howard-Glasscock County (deep)	.65

Col-Tex Refining Company

Howard and Mitchell Counties	$ .80

MARKHAM

The Texas Company
(Effective January 30, 1929)

All grades	.90

LULING

All grades	.80

NORTH AND CENTRAL TEXAS

Effective January 24, 1929)
Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude
(Humble Oil and Refining Company)

Below 25	.60
25 to 25.9 gravity	.66
26 to 26.9 gravity	.72
27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 and above	1.44

SOUTH TEXAS

Mirando	.80
Salt Flat	1.00

GULF COAST

(Effective January 26, 1929)

Grade "A" all companies	1.20
Gulf Coast Light Oil, below 25	1.05
25 to 25.9 gravity	1.07
26 to 26.9 gravity	1.09
27 to 27.9 gravity	1.11
28 to 28.9 gravity	1.13
29 to 29.9 gravity	1.15
30 to 30.9 gravity	1.17
31 to 31.9 gravity	1.19
32 to 32.9 gravity	1.21
33 to 33.9 gravity	1.23
34 to 34.9 gravity	1.25
35 to 35.9 gravity	1.27
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.31
38 to 38.9 gravity	1.33
39 to 39.9 gravity	1.35
40 and above	1.37

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

SOMERSET

Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

WYOMING-MONTANA

(Effective January 25, 1929)
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.36
Grass Creek	1.36
Rock Creek	1.18
Lost Soldier	.95
Lance Creek	1.38
Mule Creek	1.10
Notches	.65
Big Muddy	1.28
Osage	1.38
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.48
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA

Sunburst	$1.65
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

Artesia	1.08
Hogback	1.43

CANADA

(Effective April 26, 1929)

Oil Springs	2.12
Petrolia	2.05

LOUISIANA-ARKANSAS

(Effective January 26, 1929)
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and The Texas Company.)

27 to 27.9 gravity	.78
28 to 28.9 gravity	.84
29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 to 37.9 gravity	1.23
38 to 38.9 gravity	1.26
39 to 39.9 gravity	1.29
40 to 40.9 gravity	1.32
41 to 41.9 gravity	1.35
42 to 42.9 gravity	1.38
43 to 43.9 gravity	1.41
44 gravity and above	1.44

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS

(All Companies)

Below 28 gravity	.70
28 to 28.9 gravity	.74
29 to 29.9 gravity	.78
30 to 30.9 gravity	.82
31 to 31.9 gravity	.86
32 gravity and above	.90

SMACKOVER

(All Companies)

Below 24 gravity	.75
24 and above	.90
Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	1.00
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures (Barrels of 42 Gallons)

	Week Ended April 20	Week Ended April 13
AT ATLANTIC COAST PORTS—		
Baltimore	219,000	75,000
Boston	335,000	.....
New York	*889,000	975,000
Philadelphia	543,000	461,000
Others	.....	380,000
Total	1,986,000	1,891,000
Daily Average	283,714	270,143
AT GULF COAST PORTS—		
Galveston District	.....	.....
New Orleans and Baton Rouge	142,000	361,000
Port Arthur and Sabine District	.....	.....
Tampa	.....	45,000
Total	142,000	406,000
Daily Average	20,286	58,000
AT ALL UNITED STATES PORTS—		
Total	2,128,000	2,297,000
Daily Average	304,000	328,143
Daily Average Four Weeks Ended	319,500	308,107

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures (Barrels of 42 Gallons)

	Week Ended April 20	Week Ended April 13
AT ATLANTIC COAST PORTS—		
Baltimore	78,000	75,000
Boston	.....	.....
New York	150,000	172,000
Philadelphia	197,000	.....
Others	.....	.....
Total	425,000	247,000
Daily Average	60,714	35,286
AT GULF COAST PORTS—		
Total	.....	.....
Daily Average	.....	.....
AT ATLANTIC AND GULF COAST PORTS—		
Total	425,000	247,000
Daily Average	60,714	35,286
Daily Average Four Weeks Ended	73,535	82,179
Distribution of Total California Oil Receipts is as follows:		
Crude	.....	75,000
Gasoline	355,000	172,000
Gas Oil	70,000	.....
Total	425,000	247,000

*—Revised.

Oklahoma--Kansas Field Notes

WARREN BAKER, *Staff Representative, Tulsa, Oklahoma*

Two New Pottawatomie Areas Appear Important

TULSA. — Pottawatomie County oil districts continued to set the pace during the past week in Oklahoma, which was lacking outstanding completions. Indications are that the Asher pool and Kelly extension to the St. Louis pool are important new strikes. A number of new tests are being started in both vicinities. The play from the Kelly area is south to the St. Louis district, while that at Asher is surrounding the discovery producer, but it would not be surprising to witness the play going north toward the Pearson field.

Production of the Simms Oil Company's Laster 1, SE NE NE Section 19-6-4e, Asher discovery well, continues to hold at better than 3100 barrels daily. The well is producing from what is called the Viola lime although others are of the opinion that it has drilled through the Viola and that its last big increase is from the Simpson sand.

Since the discovery, leases and royalty have been exchanging hands rapidly and many high prices have been paid. A test has been started on a town lot at Asher by the Reserve Oil Company in the SE NE SE Section 18-6-4e, one-half mile north of the well. Locations have been made in Sections 17, 18, 19 and 20. More than a dozen rigs are moving in, and it is understood that several semi-wildcats will be commenced.

St. Louis Extension Deepened

The test of McGraw Oil, Martin & Irwin, Shaffer on the Kelly farm, SEc NE NE Section 2-7-4, north extension well to the St. Louis pool, has resulted in the starting of approximately 10 new tests. Others likely will start in the immediate future. A townsite has been started near the well and is called Kelly.

The Kelly producer has been deepened to a total depth of 3777 feet or 27 feet in the Hunton lime, from which formation it is producing. The deepening of the well resulted in it producing as high as 125 barrels per hour. Later it declined to 2460 barrels, 2130 barrels, and 1960 barrels on consecutive days.

To the west of St. Louis in the Darby area, Independent Oil & Gas Company's Rhodd 1, NWc Section 16-7-4, had carried production more than a quarter of a mile to the northwest. The well made 105 barrels in 24 hours from the Hunton lime at 3625-80 feet. Some other completions in this area can be expected soon. Although the Independent Oil & Gas Company's well is not a big one it is important because it has widened this new wildcat area. Apparently the most of the north part of township 7-4 will prove productive in either the Hunton, Simpson, or Wilcox sands.

Drilling in Important Wildcat

A test which has been closely watched for some time is the Tidal Oil-Twin State Oil-Simms Oil-Gardner Petroleum Company's Halberson 1, Section 31-5n-3e, in McClain County. This well topped the Viola lime at 3989 feet and shutdown at 3996 feet to run the pipe. The pipe job has been completed and the well is drilling ahead. It had the Viola to 4124 feet, where it entered the Simpson. At 4130 feet, last reported total depth it had found a rainbow show of oil.

The well found a very small amount of water around 4100 feet but this has apparently been exhausted. The Halberson is apparently running very high structurally. The acreage holders in the district pooled their acreage and now control a good sized block. Further information on the well will be awaited with interest.

Miscellaneous Developments

Shell Petroleum Corporation's Rouse "B" 3, SE NE NE Section 19-19-4w, McCully pool, of Logan County, was deepened three feet to a depth of 6087 feet in the Wilcox sand and started flowing at the rate of 100 barrels per hour. This well had a hole full of water in the top of the Simpson, which was mudded off. It has been producing for about 10 days from 6081-84 feet, doing 123 barrels the first 11 hours .

Healdton Oil & Gas Company et al's Gragg 1, SWc Section 29-18-4w, south of the McCully field in the Cresent area, has a total depth of 6700 feet still in the Sylvan shale. It is averaging from 100 to 105 barrels daily. It is the deepest producer in the state. The producing horizon is in the Hunton.

Reiter Foster Petroleum Company's Watkins 1, C SW SE Section 5-19-1w, a wildcat test in Payne County, has found a promising core in the Misener sand from 4772-92 feet. It is reaming the hole down and will go ahead to the Wilcox sand. If production is not found in Wilcox the hole will be plugged back and the Misener showing given a shot.

This well is running higher than other tests drilled in the vicinity and for the reason has been attracting attention. The top of the Cherokee shale was at 4485 feet, a core in the Bartlesville from 4615-20 feet, showed oil. The top of the Mississippi lime was 4705 feet.

Carter Oil Company et al's Community Stewart 1, NE SE Section 10-9-6, between Searight and Seminole City, flowed 3500 barrels the first 24 hours from the Hunton lime at 4039 feet. Carter Oil Company, Indian Territory Illuminating Oil Company, Prairie Oil & Gas Company, Sinclair Oil & Gas Company, Houston Oil Company and McMan Oil & Gas Company pooled their acreage, totaling 640 acres sometime ago in this vicinity. Recently a Wilcox sand producer was completed.

Mid-Continent Petroleum Corporation has given the east Little area its biggest well. It is Smith 4, SE NW NE Section 5-7-7. This well increased its production from 165 barrels hourly to 240 barrels when deepened to 4234½ feet in the Wilcox sand encountered at 4223 feet. The first 20 hours the well produced 4680 barrels.

Completions Soon Due to Determine Oklahoma City Value

TULSA.—Since discovery of the 6400-foot producing horizon in the Oklahoma City field on December 4, 1928, Oklahoma oil men have been closely following the progress of drilling activity in the district and anxiously awaiting the time when additional bits were ready to drill into the pay sand. The last of May should see at least one test penetrating that horizon, with others following during June.

The pay depth is the deepest commercial horizon in Oklahoma. Its influence in bringing about the drilling to deeper depths is already being felt in the state; wildcat tests are being carried to greater depths. If Oklahoma City should develop into a major producing spot, the incentive for deeper drilling will be even greater.

The Oklahoma City pool is not rated nearly as high as it was last December, but is still looked upon as having possibilities of developing into something of a very important nature. Intrusion of water has been the prime factor in bringing about this lower possible potential estimate peak recovery. Indications are that the discovery producer may be on the south edge of the structure, the top of which may be free of water. On the other hand the top of the structure might be so high as to carry but little oil and plenty of gas. There are many theories about the field as a result of the little knowledge about the deep producing sand. The Layton and Tonkawa sands have already proven them selves as holding prolific gas production, despite the fact that a number of the tests have carried water. Then, there is the belief that Wilcox sand production may be found on the flank of the structure, taking the idea that it has pinched out on top of the structure and that the well is producing from the Siliceous lime. Another very important development that will come with the drilling in of additional wells is to settle the question definitely as to its producing horizon.

The County's History of Oil Development

There are now more drilling wells in the county than have ever been completed, despite the fact that some of the earlier tests of the state were in this vicinity. These tests were for the most part very shallow ones, since it was thought useless to carry them deeper as that was the depth for good production at that time in northeastern Oklahoma. Up until 1928 there was an average of but one completion per year.

What was probably the first test to be drilled in the county was in the heart of what is now Oklahoma City. Its location was near where Fourth Street now crosses the Santa Fe Railway. The operators of the well are not known. It was carried to 400 feet. The record of when the test was made has even been lost.

In 1917, the county received encouraging news. It was the discovery of a large surface structure located by Jerry Newby, geologist, who had been employed by the Oklahoma City Chamber of Commerce to make a survey of the county's possibilities for oil production. Newby's structure was in the east side of Oklahoma City running northwest by southeast. It resulted in nothing in the way of important development.

It was not until 1921 and 1922 that anything further in the way of importance was done. L. E. Trout, independent oil operator and geologist, became interested at this time and surveyed a large surface structure six miles southeast of Oklahoma City, extending northwest into the city limits. A number of other prominent geologists checked the surface structure and all agreed that it appeared to be one of the largest in the state and that it had excellent possibilities for oil production. This is approximately the same structure upon which the county's new pool is now situated.

Trout obtained oil and gas leases covering his survey. Together with G. V. McBeth of Newton, Kansas, he prepared to test the structure, McBeth agreeing to drill a hole in the NWc SE Section 36-11-3w, known as the Firestone Oil Company or Trout well. W. B. Green, J. R. Cecil and C. H. Overton later purchased the interest of McBeth.

Cable tools were used, but cavey formation made it difficult to drill and 27 months were required to reach 4480 feet, where it was abandoned. A very good showing of oil and gas was found at 3354 feet.

W. R. and W. E. Ramsey purchased an interest in the well and block at the time of the showing at 3354 feet. They continued to add to their holding until they owned approximately 50,000 acres. Commercial production was not carried in the 3354 foot sand and the well was carried deeper, showing oil at 4289, 4305 and 4340-55 feet. Some oil was bailed from these sands but not in sufficient quantities to make it pay for producing it.

Following abandonment of this test

COMPLETED WELLS, OKLAHOMA COUNTY

Company, Farm, Location—	Total Depth feet	Completion Date	Remarks
———, 4 St. & S. F. Ry., SW SW NW 34-12-3w	400	?	Thought to be first well in county.
Schweinle-Streeter-Hivick, NE 14-12-2	2002	1903-04?	Dry: 4 ft. coal at 700 ft.
Ames, Armstrong, Shartel et al, CEL 14-12-4w	1000		
Three Wells near Arcadia in Section 28-14-1w		Before 1906	Abandoned at less than 1000 ft.
Luther Oil & Gas Co., Oliver Black 1, SW 34-14-1e	2100	1915	Dry.
Mutual Oil & Gas Co., NW NW 7-12-2w	2925	1916	Dry; gas show 2900 ft.
———, E. W. Hughes, NE 33-14-1w	?	1916	Artesian water.
———, Chas. Aspland 24-13-4w	?	1917	Spudded only (?)
Idaho Drilling Co., 17-14-4w	1600	1921	
Big 3 Oil Co., J. Wild 1, SW S WSE 31-12-2w	1322	10/31/22	Dry; gas show 330-38, 1195-1200 ft.
Bailey & Ramsey, Duncan 1, C SE SE 9-11-1w	4512		Dry.
Ramsey, Jordan 1, SE SE SE 8-12-1w	3990	1/27/24	Dry; oil and gas show 3645-63 ft.
W. B. Green, School Land 1, NW NW SE 26-11-3w	4480	12/10/24	Dry; oil show 1985 ft, oil and gas show 3354-72 ft, 3520-50 ft, 4289-958 ft, 4340-55 ft. This well also called Firestone or Trout well.
Merchants Oil & Gas Co., Housh 1, NE NE SW 5-11-2w	3001	6/25/24	Dry; gas show 720 ft, oil show 2178 ft.
Maxine Petroleum Co., Kelley 1, NW SE SW 9-14-1w	2063	7/20/25	Dry; gas shows 1918-25, 1929-48, 2011-37 ft.
Cromwell, Edwards 1, S WSW SE 10-12-3w	4393	January, 1926	50 bbls., cutting 25 per cent.
Cromwell-Franklin, Proctor 1, C SE 21-14-3w	4534	8/ 6/27	Dry.
Indian Territory-Foster, Fee 1, SE SE SE 24-11-3w	6498	12/ 4/28	5700 bbls., 6355-6498 ft; 25 mil ft gas 3997-4012 ft; 47 mil ft gas 4805-16 ft.
McKeever Drilling Co., et al, Sampson 1, NE SW 27-11-3w		2/28/29	Location only.
Indian Territory-Foster, Fortson 1, SE SE NE 24-11-3w	3953	4/10/29	28 mil ft gas. Using for fuel.
Wirt Franklin, Lowery 1, SWc NW NW 12-11-3w	4010	4/21/29	50 mil ft gas. Using for fuel.

came a period of little or no acitivity. Wirt Franklin and Joe Cromwell brought attention to the district in 1926 when their test on the Edward's land in Section 10-12-3w encountered several showings of oil. Following the discovery of a number of showings in this well, several of the larger companies obtained leases in the county, particularly on the Oklahoma City structure.

Early in 1927, Indian Territory Illuminating Oil Company and Foster Petroleum Corporation became interested and after checking the geology purchased all the remaining leases and royalties. In June, 1928, these companies were ready to start a deep test.

Completion of Indian Territory Illuminating Oil Company-Foster Petroleum Company's Fee 1, C SE SE Section 24-11-3w, on December 4, 1928, is well remembered. At 6355-6402 feet in a sandy lime formation, the well produced approximately 5000 barrels of 38 gravity oil. Later it was deepened to 6498 feet and increased production. The last part of the hole did not carry production, however.

This well proved to be the sensational wildcat discovery of the year; water intrusion during February resulted in a sharp drop in production, which was checked by the use of air pressure, but later this recovery also commenced to drop.

Field Force Reained in Pure-Lion Deal

Fort Worth, Texas.—Lion Oil & Refining Company has arranged to absorb the entire field staff engaged in operating the Winkler County oil producing properties purchased from Pure Oil Company, according to M. E. Wilson, vice-president in charge of production for the latter company, which maintains headquarters at El Dorado, Arkansas. Sale of the properties only affects the field men to the extent of being shifted to a new payroll.

H. H. Brewster, who makes his home at Odessa, Texas, has been district superintendent of production for Pure Oil Company, and will continue in the same capacity, with field office at Wink, Texas. A. A. Goodman will likewise continue as lease foreman, and assistant to Brewster, while both will work under the direction of Mr. Wilson, who contemplates spending a portion of his future time in Texas, and later established a branch production office at Fort Worth.

Gas Franchise

Tulsa.—Woodward and Mooreland, Oklahoma, have granted 20-year franchises for natural gas service to the United Gas Service Company of Bartlesville. These franchises cover both domestic and industrial service. The Cities Service gas pipe line from Texas Panhandle to Kansas City passes near each city. Elections ratifying these franchises will be held in each of these cities the week of May 20. C. E. Burlingame, president of the United Gas Service Company, announces that pipe has already been shipped to Woodward and work will be started at once laying the line from the main line to the city.

Slick Buys Asher Acreage

Tulsa.—Tom Slick Oil Company has purchased from C. J. Wrightsman, president of the Wrightsman Petroleum Corporation, all of the latter's holdings in the Asher field, southern Pottawatomie County. The acreage in townships 6-4e and 6-3e. It is said that the total consideration was $1,200,000 part in cash and the remainder in oil to be produced by the leases sold.

The acreage is near the Simms Petroleum Company's Laster 1, SEc NE NE Section 19-6-4, which is flowing better than 3000 barrels daily from the Viola lime.

New Sedgwick Area Due for Quick Development

WICHITA, Kansas.—Shell Petroleum Corporation's Lygrisse 1, SEc NE Section 15-26-2e, nine miles east of the Valley Center field in Sedgwick County, featured Kansas development during the past week. This well topped the pay at 3164 feet and while only two feet in filled up with oil and made a few flows while connections were being made. When opened up it flowed 220 barrels in 12 hours, which was disappointing. Later it was deepened one foot to 3167 feet and has been flowing 80 barrels hourly since that time.

Apparently this new pool will be drilled with rotaries as the locations made so far are to be drilled with this type of tool. This assures that the field will experience quick development. Shell Petroleum Corporation drilled the discovery well with cable tools but is moving in rotaries for its offsets. Shell Petroleum Corporation controls most of the acreage in the vicinity. Gypsy Oil Company has a promising 80-acre lease offsetting the producer.

This new producer helped send the production of the county to a new peak output of slightly over 30,000 barrels from 54 wells. This peak is expected to be materially increased shortly with the drilling in of additional wells. The output of the Wright field is holding much better than early performances after the completion of a large number of wells indicated.

Shell Petroleum Corporation, George Dickey and Shawver's Robbins 1, NWc SW Section 21-28-1e, new wildcat producer south of Wichita, which came in for 30 barrels per hour from chat at 3080-87 feet, has been deepened one foot which brought its production back up to around 35 barrels per hour. Several offsets are to be made at once.

McPherson Has First Producer

Ted Washabaugh et al's Voshell 1, NW NE NE Section 9-21-3w, wildcat test nine miles south of McPherson, which filled up with oil last week from the Viola lime at 3301-03 feet, with some gas, experienced hard luck last week. After waiting for the building of tanks and moving back of the boiler, the crew started reaming the hole down to case off 300 feet of open hole when the pipe was dropped. Some of the pipe has been recovered but there still remains a number of joints to be fished out.

The well is on a core drilled structure said to cover a large area. Its performance in filling up at once indicated that it would be a big well. It is the first well in McPherson County to produce from the Wilcox series. Regardless of its final outcome it is an outstanding strike. In addition to further encouraging the moving of the central Kansas play to the north it has opened McPherson for development in the Wilcox series.

A number of important wildcat tests are due to be drilled in throughout central and western Kansas during the next two weeks and a number of important discoveries may be made.

Ventura

Ventura, Calif.—The Ventura field showed a reversal of form during the past week, with two good completions bolstering production and adding considerably to the field average. Associated Oil Company lnished Lloyd 71 at 7365 feet with an initial production of 3000 barrel of 30 gravity oil. This was one of the largest completions of the year and regained some of the prestige Ventura has lost by a series of mediocre wells. The gas flow was about three million cubic feet. The company also completed Lloyd 46, which came in with an initial production of 1600 barrels from 6250 feet. The oil showed a cut of seven per cent. despite a high gas pressure and a flow of four and one-half million cubic feet.

Round Mountain

Bakersfield, Calif.—Shell Oil Company, only active operator in the Round Mountain area, has completed Jewett 5 with an initial production of 350 barrels. The well was drilled to 1810 feet and is producing from the upper sand. Shell Oil Company obtained the patented lands in the field on a purchase 18 months ago, the permit lands going to the Honolulu Consolidated Oil Company, an American organization.

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

New Semi-Shallow Pool Opened In Glasscock County

SAN ANGELO. — Discovery of a semi-shallow oil pool in north central Glasscock County has been made by World Oil Company on the McDowell ranch, and preparations were under way Tuesday to make a test of the production.

Late reports from the well credit it with slopping over the top of casing at a steady flow, but only a small volume of gas was in evidence. The oil is free from water, and tests 26.5° gravity, being similar to the deep oil coming from the Roberts section of Howard-Glasscock County district. The lime production horizon was logged at 2340-56 feet, and the most prolific sand was at 2385-98 feet. This well encountered the big lime at 2263 feet, with a surface elevation of 2530 feet, and is located at the center of a 160-acre lease.

Deeper drilling on Mid-Kansas Oil & Gas Company's wildcat test on the Lackey ranch, which promised to give Coke County its first production several weeks ago, resulted in disappointment early this week as salt water was encountered at 3785 feet. The test is located in the northeast corner of Coke County. It will be plugged back to make further test of the good showing of oil uncovered at 3755 feet.

Pure Oil Company's wildcat on the Williamson land, Gaines County, has been ordered plugged at 4124 feet after twisting off the drill stem.

Andrews County added another failure when Deeprock Oil Company's Hostetter 1 shut down to plug at 4602 feet. It had small show of oil at 4568-79 feet, but was low on the structure.

Assurance of an oil producer after making a third test on the L. S. McDowell ranch, Glasscock County, was had Saturday by the World Oil Company's McDowell 1-C when it began filling with oil from sandy-lime formation at 2351 feet. This wildcat is 1650 feet from the north line and 2310 feet from the east line of Section 21, Block 34, T&P survey, T-2-S, and is conveniently located to the trunk line of the Atlantic Pipe Line Company. It is situated along the general trend of production extending in a southwestern direction from the Howard-Glasscock County field, and about seven miles southwest of the nearest production, being the Settles pool.

Evidence of oil on the McDowell ranch was made known before the establishment of the first bonifide oil field in the West Texas district to the northeast in Mitchell County through the wildcat efforts of S. E. J. Cox and the General Oil Company. The latter concerns McDowell 1, located on the southeast quarter of Section 35 and about three miles southwest of the above new strike, was rated as a 20 barrel pumper in August, 1920, from lime at 2585-2645 feet, with a total depth of 2655 feet, and the promotion work that accompanied this discovery resulted in somewhat of a boom hitting the nearby town of Big Spring. However, the General Oil Company's McDowell 1 never produced more than drilling fuel for other tests that followed. Gulf Production Company acquired the original General Oil Company's holdings from M. McDonald of Houston in October, 1924, and later drilled two deep tests, including one that pumped 118 barrels of oil and two barrels of water first 24 hours at 2988 feet, but a rapid drop in production followed, so the exploration work was abandoned. A toll of about one dozen wildcat failures have been drilled within a five mile radius of the General Oil Company's first well, including two by the Meriwether Oil Company.

W. A. Moncrief and W. W. Donnelly's wildcat test on the J. S. Todd ranch, Crockett County, failed to increase in oil or gas production when deepened to 1392 feet in hard gray lime after passing up a good show of oil at 1365-69 feet. A small pumper may yet be developed from L. C. Harrison and associates' wildcat test on the G. M. Dodge land, Section 9, Block 30, T&P survey, T-1-S, Howard County, after plugging back from 3257 feet to 3000 feet, and making two heavy shots. This test is credited with having pumped 45 barrels of oil on first seven hour gauge last week, with cleaning out work still in progress. It drilled through the pay horizons last November, and stood idle for many weeks after reaching contract depth.

The east flank of the Hendrick field, Winkler County, contributed a flowing well from a work-over well recently when the Southern Crude Oil Purchasing Company and Westbrook Interests' E. G. Hutchings 3-T-90, located on east line of Section 47, Block 26, responded to two shots at 2793-2990 feet with a flush output of 28 barrels per hour. This well was completed last November at 3060 feet with an initial output of 300 barrels, although located in what was generally considered all gas area. Humble Oil & Refining Company's Walton 1-A has resumed rigging up rotary to test the pay horizon, and other locations may follow.

Penn Oil Company and associates' wildcat test on the E. G. Bowles land, which gave rise for a brief lease and royalty play early in April on nearby acreage in Northeastern Reeves County, is credited with having topped the Deleware lime at 5200 feet and the Deleware sand at 5240 feet, with a surface elevation of 2783 feet. The owners of this test have tentatively decided to plug same, unless production is encountered within the next 100 feet of drilling. The test encountered a show of oil April 5 at 5175 feet, and when deepened two feet later it filled up rapidly, with the small amount of oil in hole riding atop the column of fluid, thus causing the crew and owners to think that a good oil well was in the making. A bailing test of the fluid was not made until April 12, revealing practically all water, but in the meantime tentative trades had been made on more than a quarter of a million dollars worth of leases and royalties, with the test owners doing the most buying. According to R. R. Penn, president of the Penn Oil Company, contract has been made to drill a 4000-foot test after October 1, 1929, for a one-third interest in a six section block held by Humble Oil & Refining Company on the Texas Pacific Land Trust's fee in Ector County, and location will probably be made in Section 7, Block 44, T&P survey, Tsp. 3-S.

Edgar Allen

High Speed Carbon and Tool Steels

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A new high speed steel
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Widespread publicity was given recently by the daily and technical press to our new "wireless" (as the newspapers called it, not quite accurately) steel-making process, of which we are the pioneers. If we have delayed in making direct claims for the steels made by this process, it is because we wished to assure ourselves by tests and trials that our claims were justified, but it is now *definitely* proven that Edgar Allen tool steels made in the high frequency electric crucible furnaces are *superior* to those made by the old crucible process or other processes. The explanation is simple.

(1) There is no contamination of the steel by gases, fuel or carbon electrodes. Sulphur and phosphorous, those deadly enemies of the steel-maker, are eliminated to a greater extent than has ever before been possible.

(2) Furthermore, there is a violent stirring of the molten metal electrically, which results in a thorough diffusion of the ingredients throughout the entire mass. This gives the steel greater homogeneity and avoids segregation.

These factors, with others that need not be mentioned here, have enabled us to put on the market a *new high speed steel*, new both in composition and process of manufacture, nearly three times as efficient as an 18% tungsten high speed steel.

The name of this steel is IMPERIAL MAJOR high speed steel. If your problem is to obtain maximum output from the most up-to-date machine tools, this steel, made by the new process, will solve it.

In order that you may test, without risk, the claims we make for this steel, we shall be pleased to supply it *on approval* and if same does not give satisfactory results, the steel can be returned, and the invoice will be cancelled.

Illustrated is a reproduction of the famous chart prepared by the Edgar Allen Steel Company, aided by the great research laboratories of the Sheffield plants. As a guide to tool makers in the use of Edgar Allen High Speed Carbon and Tool Steels. Upon request we will be glad to furnish you with one. Write us.

The chart tells the story..

The name *"Sheffield"* on High Speed Carbon and Tool Steels products of the Sheffield Mills of the Edgar Allen Steel Company, is world famous for quality. The chart helps illustrate the great care taken in the preparation of the hardening and forging temperatures to make these steels unexcelled for the special uses for which they were formulated. We invite the opportunity of discussing the possible uses of *"Sheffield"* Steels, with executives interested in the betterment of their products with regard to strength, durability and long life.

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OIL WELL EQUIPMENT

Shreveport Geologist to Have Field Trip

Shreveport, La.—The Shreveport Geological Society will hold its seventh annual field trip on June 7, 8 and 9, according to W. F. Chisholm, secretary. The trip will start from Union Station, Memphis, Tennessee, June 7, the entire trip to be made in one or two busses, with no private cars allowed.

The first day will be from Memphis to Columbia, Tennessee, and the party will spend the night at Columbia. The second day will be from Columbia to Muscle Shoals, Alabama, with the second night spent at one of the three towns at Muscle Shoals. The third day will be from Muscle Shoals to Tupelo, Mississippi, and from Tupilo back to Memphis. The trip will cover the Eocene, Cretaceous and Palezoic down to the Know Dolomite.

All Oil Stocks Increased In March

New York, N. Y.—According to the American Petroleum Institute's summary of stock changes for March, stocks of crude east of California, increased 3,118,000 barrels, while refinery stocks of all oils registered a combined increase of 5,016,000 barrels. Following are the detailed figures reported by the Institute:

	Increase	Decrease
Stocks of crude, East of Cal.	3,118,000	.....
Refinery Stocks—		
Domestic crude oil	1,355,000	.....
Foreign crude oil	1,301,000	.....
Gasoline	1,175,000	.....
Kerosene	106,000	.....
Gas and Fuel oils	282,000	.....
Lubricating oils	205,000	.....
Miscellaneous	592,000	.....
Total refinery stocks	5,016,000	.....

Crude oil stock changes in California, including heavy fuel oil, showed an increase of 4,088,354 barrels. Refinable crude of 20 gravity and lighter increased 2,090,624. The latter is included, however, with total crude stocks.

Caribbean Club Holds Annual Sports Meet

Representatives from all the oil fields of Western Venezuela gathered in Maracaibo for the Caribbean Club's Second Annual Easter Sports Meeting held on March 28, 29, and 30, last. Although primarily a Shell affair, invitations were extended to the staffs of all the oil companies operating in the Maracaibo Basin, who contributed very materially to the attendance and to the athletic competition. The features of the three-day meet included amateur theatricals, tennis tournaments, acquatic sports, field and track events, and miscellaneous special events.

A large number of entries were received, and it was necessary to devote practically all of the first two days of the meet to elimination contests. The championship cup was worn by the Maracaibo Club (Shell), which chalked up a total of 82 points, or more than double the total score of its closest rival. The competition for the trophy awarded to the best all-around athlete, however, was very close, J. L. Arthur, of Mene Grande, winning by one point over K. W. Patterson, division engineer, of Cabimas. Patterson, in turn, led H. de Boer, of the water transport department, by only one point.

Miss Virginia Roberts, daughter of "Pop" Roberts, superintendent of wildcat operations for Venezuela Gulf Oil Company was the star among the feminine contestants. She slipped through the water in record time to win the ladies free style swimming race.

The dramatic section of the Caribbean Club presented a three-act farce, entitled "Another Foggy Night," which was very well received on the first night of the meet.

C. Scholfield, purchasing agent for the Shell subsidiaries, was the outstanding star of the show in his characterization of John Smith, enmeched in a complicated situation of mistaken identity and misapplied romanticism. His offerng of pure "cockney" was unbeatable. Mrs. M. Reeve, who portrayed the part of the wife of the Reverend John Smith, achieved an excellent characterization of a clergyman's wife; and Miss A. Ballantyne was very successful in the character of Mrs. Penting, a cockney housekeeper.

A 15-minute curtain-raising skit was offered by C. Scholfield, as a weary and somewhat moth-eaten waiter, and Miss Dora Roscoe-Jackson, as a charming but very much dissatisfied diner.

Other members of the caste included C. Lewis as the Reverend John Smith, C. W. Wood as Col. Duncan, retired, amorous, and alcoholic, Miss B. Moir as Mrs. John Smith, R. Dicks as Sergeant Duffel, a pompous police detective, H. W. Fisher as Desmond, and Miss C. Y. Coldwell as Miss Fotheringay.

Seal Beach

Los Angeles.—Two good wells in the Seal Beach field kept production upward during the week and brought the field total to almost 50,000 barrels. Marland Oil Company, already the largest producer in the field, completed McGrath-Selover 6 with an initial production of 1650 barrels of clean oil. The well was drilled to 5420 feet. Standard Oil Company placed San Gabriel 6 on production at 5120 feet, with a flow of 1350 barrels. The oil was 26 gravity and showed a negligible cut. The fact that the oil in both completions was clean indicates that a much larger production is possible.

Mt. Poso

Bakersfield, Calif.—Seven new locations during the week in the Mt. Poso district gave fresh impetus to the wildcatting program now under way along the east side of the San Joaquin valley and brought the number of active operations to the level of last month. Petroleum Securities Company, with six new locations, led the list and became one of the most active operators in the district. This company, which is now a chiefly exploratory organization, holds leases totaling several thousand acres in the district.

Rincon

Ventura, Calif.—Activity in the Rincon field is expected to be limited to the completion of an occasional shallow well and the deepening of a few of the older producers, unless a deeper production is obtained. Little progress has been made in the extremely deep tests now drilling and one has been plugged back to produce in the shallower sands. Richfield Oil Company is fishing and cleaning out in Hobson-Fee 1, which was drilled to 7283 feet. Several feet of oil sand was cut below 7000 feet in this well, but it failed to make a commercial producer.

Maricopa Flats

Taft, Calif.—Several new locations in the Maricopa Flats, a part of the Sunset district, have been made, bringing the number of new derricks to the highest figure of several years. Signal Oil and Gas Company's discovery well on Section 8-11-23 continues to flow at the rate of 1500 barrels. The company has made two more locations on the same lease.

Magnolia Plans Gas Line To San Antonio

San Antonio, Texas.—Magnolia Gas Company has completed plans for construction of a 90-mile gas pipe line from Southwest Texas to San Antonio for the purpose of augmenting the present supply of natural gas being run to that city for domestic and industrial utilization. The line will cost approximately $1,000,000, will consist of 60 miles of 20-inch pipe and 30 miles of 18-inch pipe, and will begin delivery of roundly 30,000,000 cubic feet of gas on completion before the close of this year.

Monroe, Louisiana. — The Nemours Corporation has bought 120 acres of mineral rights including both oil and gas rights in the northern part of Ouachita Parish for a consideration of $75,000, according to a deed filed here. The acreage was purchased from Charles W. Frierson. A 3/32 undivided interest in the oil rights is excepted from the sale as is a one-eighth royalty owned by W. C. Feazel of Monroe. No announcement of what development on the property will be made has been announced.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Black Bayou Producing From Cap Rock

Houston.—Shell Petroleum Corporation's Watkins 9, first oil producer at Black Bayou, Cameron Parish, Louisiana, was swabbing 29 barrels pipe line oil daily early this week; the production testing 19.6 gravity, and coming from the cap rock at a total depth of 981 feet. Casing is set at 965 feet. Location of this well is 999 feet west and 1243 feet south of the northeast corner of Section 18-12s-12w.

Presence of a dome at Black Bayou was indicated through geophysical work, and Shell Petroleum Corporation secured a large block of leases in the area and has been operating there about a year; the present oil producer being the eighth completed test there.

Although Watkins 9 is the first oil producer, the first test of the area, Shell Petroleum Corporation's Watkins 1 proved the existence of a dome as indicated by geophysics. It hit cap rock around 1250 feet and was at length plugged and abandoned in salt at 1700 feet.

Shell Petroleum Corporation has two rigs at Black Bayou. Its Watkins 6 is drilling shale and lime at 4592 feet and is incidentally the deepest test of the area; one previous test having gone to 2400 feet while the others ranged from 900 to 2300 feet in depth. Shell Petroleum Corporation is now building derrick for Watkins 10.

Raccoon Bend

Houston.—Average daily production at Raccoon Bend, Austin County, during the week ending April 27 was 3650 barrels, as against 2550 barrels daily the previous week; the increase being due to completion by Humble Oil & Refining Company of three new wells during that period.

The latest of the three new producers is Dietrich 2, which had initial production of 850 barrels, with the bottom of the hole at 3317 feet. That well is 1900 feet northwest of Urban 2, and approximately the same distance from Urban 3, which is one of the three new wells, having come in for 500 barrels initial.

Third Mile-Deep Well at Humble

Houston. — The third large producer from the new mile-deep sand in the southeast part of the Humble field came in when The Texas Company completed Stevenson 39 at 5248 feet. The well flowed 10,043 barrels the first 24 hours after completion on April 25, making pipe line oil testing 43.2 gravity. A leak developed in the line, and the well gauged 6418 barrels on April 26, flowing through two one-half-inch chokes. On Tuesday, April 30, the well was reported making around 4000 barrels.

Stevenson 39 is less than 100 feet north of Cullen & West's Morris 1, deep sand discovery well of this part of the field, which came in on January 4, 1929, and which is still making approximately 1000 barrels daily. Cullen & West's Morris 3, a southwest offset to Morris 1, is also a producer; the combined production of the Morris 1 and Morris 3, according to a report on Tuesday was 4154 barrels.

The Texas Company is down 1520 feet in gumbo in Landslide 262, which is an offset to Cullen & West's Morris 3; and has derrick up for Landslide 263. Humble Oil & Refining Company's Williams 1, also located near the deep producers of this area, has set casing at 3938 feet.

Details of Gulf Loops to Coast Completed

Houston.—Completed plans for loops on the Grandview-Port Arthur division of Gulf Pipe Line Company's West Texas-Gulf Coast carrier show specifications for 207 miles of pipe, including eight, 10 and 12-inch. Work is now under way on this south section of the increased line, due for completion early this fall, and the new capacity will be approximately 40,000 barrels.

The Grandview to Wortham section will be 37 miles of 10-inch pipe. There will be 30 miles of eight-inch and 20 miles of 10-inch looping between Wortham and Elkhart. From Elkhart to Lufkin, there will be 30 miles or eight-inch and 20 miles of 10-inch line added, 25 miles of 12-inch line from Lufkin to Chester, 25 miles of 12-inch from Chester to Sour Lake, and 20 miles of 10-inch line from Sour Lake to Olean (Port Arthur), location of Gulf Refining Company's largest refinery and shipping point.

Sugarland Now Third Rank in Gulf Coast

Houston.—During the past week Humble Oil & Refining Company completed two more oil producers at Sugarland, Fort Bend County; making that field's record now 19 completed producers without a single dry hole. For the week ending April 27 the average daily production at Sugarland was 11,000 barrels. The two new wells increase the daily production to approximately 13,500 barrels.

Humble Oil & Refining Company's Nelson 2, and Brazos Farms 5 are the two new wells. Nelson 2 came in at 12 p. m. April 28, making 1200 barrels at 3672 feet; and Brazos Farms 5 was completed for 1200 barrels at 3598 feet. Both of those wells are in the south part of the district.

Due to the long life of the wells at Sugarland and the fact that there have been no dry holes, the field has risen to third place among the fields of the Gulf Coast in daily output, although only 19 tests have been completed. Spindle Top and Pierce Junction are the largest and next largest fields in the Gulf Coast now; with daily production of approximately 32,500 and 21,000 barrels, respectively.

Gonzales Well Failure

Houston.—Indiana Petroleum Corporation's Karnstadt 1, located about one-quarter mile southwest of Empire Gas & Fuel Company's Norwood 1, discovery well of a new producing area near Ottine, Gonzales County, has been abandoned at 4344 feet, having failed to obtain production although it was drilled into the Edwards lime. Empire Gas & Fuel Company's well is said to be producing from sandy shale in the base of the Taylor marl at total depth of 3779 feet.

The Indiana Petroleum Corporation well hit the top of the Austin chalk at 4102 feet, after passing through the Taylor marl without finding oil as in the Norwood 1 of Empire Gas & Fuel Company.

Benedum Trees Oil Company's J. L. Lamkin 1 in this area, and about one mile north of Ottine, is now drilling chalk at 4200 feet, having topped that formation at 3990 feet.

Empire Gas & Fuel Company's Norwood 2, an offset to Norwood 1, was reported early this week to be drilling chalk at 3865 feet after having topped the chalk at 3695 feet.

Eleventh Oil Producer Completed at Refugio

Houston.—The eleventh oil well at Refugio was completed when Oigufer Oil Company brought in Shelly-Ryals 1 on the east edge of the field for 250 barrels pipe line oil initial, the production coming from 14 feet of oil sand at 3683 feet total depth, and flowing through a one-quarter-inch choke.

Besides this oil well, one gas producer was finished at Refugio during the past week. It was the Houston Gulf Gas Company's Rose Lambert 2, which came in as a 75 million foot gasser at 3646 feet.

The above mentioned oil well, Oigufer Oil Company's producer, is an east extension of the oil production of the field, being northeast of Mission Drilling Company's Cummings 1, in the southeast part of the field.

Scout Association Merger Nearer After Wichita Meeting

WICHITA. — The fourth annual convention of the Mid-Continent Oil Scouts and Land Men's Association held at Wichita, Kansas, was a successful event of last week. Approximately 250 field men from Oklahoma and Kansas registered. The two-day convention was spent in business sessions, getting acquainted, visiting the new developments in central Kansas, and several entertaining features, arranged by E. J. (Ted) Gordon, of the Pure Oil Company at Wichita, who was in charge of the committee on arrangements.

The merger of the Mid-Continent Oil Scouts and Land Men's Association and the National Oil Scouts Association, which has been under discussion for a couple of years, appears nearer today as a result of several developments at the Wichita convention. R. T. (Bob) Lutz, with the Humble Oil & Refining Company, at Vernon, Texas, was a guest of honor representing the National Oil Scouts. He presented a plea for the merger and will talk to the National Oil Scouts convention at Fort Worth on May 20 and 21.

Following Lutz's talk, a prolonged discussion was held after which it was decided that the new officers and board of directors of the Mid-Continent Oil Scouts and Land Men's Association would meet with a committee to be appointed by the National Oil Scouts at their convention. The two committees are to take up the problem of eliminating a few differences in the constitutions of the two scout organizations. It is hoped that the merger can be perfected and that through the organization of this one great scout body that American Petroleum Institute recognition may be obtained. All scout organizations of the country are to be asked to join and in states where the scouts are not organized they are to be asked to do so and join the proposed new association.

The business meeting following the discussion on the proposed consolidation turned to the election of new officers for the coming year. Robert P. Brewer, Jr., scout for the Barnsdall Corporation in the Wichita area, was elected president by acclamation. Ralph Walkingstick, Tidal Oil Company scout at Shawnee, was made first vice-president, and Clark Piggot, with the Pure Oil Company at Ponca City, second vice-president. M. P. (Pat) Norwood, scout for the Prairie Oil & Gas Company at Sapulpa, was elected secretary-treasurer.

Fred J. Hill of Mid-Continent Petroleum Corporation, Tulsa, and retiring president was given a vote of thanks for his splendid work of the past year. Simon Crites, Shawnee, retiring secretary-treasurer for the past two years, was given a golf bag as a token of appreciation for his good work.

Saturday afternoon the scouts were guests of Pryor and Lockhart at a barbecue given at a club house near Norwich.

Friday was spent in registration and getting acquainted. That night the annual banquet took place. Frank Priest, representing the Wichita Chamber of Commerce, welcomed the scouts to the city and stated he hoped they would hold their convention there next year. R. T. Lutz spoke on the passing of individualism and the present grouping of concerns into great bodies. Ray M. Collins, Oklahoma proration umpire, gave an interesting brief talk during which he thanked the scouts for their wholeheartedly cooperation with him. He stated that continuance of the cooperative reduction of production is necessary. Oklahoma and Kansas might be able to take care of their production but it was necessary to carry on to combat the difficulties of any new fields. L. E. Phillips, vice-president of the Phillips Petroleum Company, Bartlesville, Oklahoma, gave the principal address of the evening.

The selection of the convention site for next year's meeting was left to the officers and board of directors.

Increased Activity Seen for New Mexico During Summer

ARTESIA, New Mexico. — Having recently completed a development program of 14 deep tests in Lea and Eddy Counties, Marland Production Company and associates announced six new locations during the past week that are to be drilled to the deep lime horizon, with five of same located in Lea County. The latter county added a dozen new locations during April, and a substantial increase in drilling work is assured for the summer months because of compulsary development work specified by mineral permits. A number of recently completed oil and gas wells are likewise requiring offsets in view of the starting of regular deliveries of natural gas to the new line to El Paso, and promise of pipe line connections by the Texas Pipe Line Company and Humble Pipe Line Company for most of the shut in oil wells scattered over the eastern half of the county.

Construction work on the El Paso Natural Gas Company's 204-mile 16-inch welded carrier, extending from the gas area centering around the town of Jal, Lea County, was completed recently, and testing work was made with gas furnished by the Marland Production Company and The California Company's Sholes, Government permit Number 2, gasser. This gas line was completed ahead of its scheduled date, May 1, and is to supply the extreme western section of the state with its first natural gas, with a normal operating capacity of 35,000,000 cubic feet daily. The company has contracted to purchase gas on a long time contract from The Texas Production Company, Amerada Petroleum Corporation and Columbian Carbon Company, joint owners of gas and oil proven acreage; Midwest Refining Company; and the Marland-California Company interests. The line was electrically welded by Smith Brothers, Dallas contractors.

Heavy gas production was developed during the past week in virgin territory of Lea County when the Vacuum Oil Company and Rycade Oil Corporation's State 1, located in the SWc NW Section 13-17S-34E, showed eight million cubic feet from broken pay at 3848-3940 feet. Eastland Oil Company has contract to make a 4800-foot test.

Materials are being purchased and contracts awarded for the starting immediately of most the new locations made by Marland Production Company, with The California Company holding a one-quarter interest in the acreage and tests. The latter company shared to the above extent in two of the nine dry holes drilled recently by Marland Production Company in Lea and Eddy Counties, and the partnership successfully completed four gassers, aggregating 111,500,000 cubic feet of gas on initial flow gauge, and one oil well rated at 250 barrels daily in Lea County.

The following locations for deep tests in Lea County were made during April, and each will involve an average drilling cost ranging from $50,000 to $75,000:

J. D. Cook et al's State 1, 660 feet from north and 2310 feet from east lines Section 12-21S-33E.

Empire Gas & Fuel Company's Martin 1, 2310 feet from north and east lines Section 28-20S-33E.

Flynn-Welch & Yates' State 1, 660 feet from north and 1980 feet from lines Section 3-21S-33E.

Gypsy Oil Company's Humphreys 1, 330 feet from northwest corner southwest lines Section 3-21S-33E.

Midwest Refining Company's Jennie D. Fisher 1, 990 feet from north and 1650 feet from east line Section 5-20S-35E.

Shell Petroleum Corporation's O. B. Terry 1, 2310 feet from north and 1650 feet from east line Section 22-19S-38E.

Marland Production Company and The California Company's H. A. Flint 1, 330 feet from southeast corner Section 28-20S-34E; McCallister 1, 330 feet from southwest corner SE Section 24-26S-36E; Bill Meyer 1, 330 feet from southwest corner N½ Section 28-22S-36E; A. E. Meyers 1, 990 feet from southwest corner Section 17-21S-36E; E. J. Wells 1, 330 feet from southwest corner E½ NE¼ Section 11-25S-36E.

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News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

New Wells Offset Proration Effort At Santa Fe Springs

LOS ANGELES.—Two opposing factors in the Santa Fe Springs field—curtailment on one hand and a bunch of brand new wells which will not be cut back for at least 10 days on the other—made it a very difficult matter to place a definite level on production and caused the field to register heavier in the weekly totals than was expected during the first few days of conservation.

New producers in the O'Connell zone have not only checked the production decline but have raised the field total to a much higher figure than that of three weeks ago. This formation is showing its colors and new production from new wells is expected to hold the field far above the allotted 125,000 barrels, even though the operators cut back to conform with the curtailment plan.

General Order 1 supposedly went into complete effect April 22, but the confusion following efforts to make the correct reductions and the fact that many leases had dropped to a production below that specified as allowable, caused some of the operators to wonder just where they stood. With a potential production of around 175,000 barrels and an allowable figure of 125,000 barrels, the actual figure hit somewhere between the maximum and minimum, but probably well toward the maximum figure. It will require several weeks to find the correct average allowed while new wells will add to the confusion.

The O'Connell and Lower Clarke zones are now claiming all of the attention, the Upper Clarke having been virtually abandoned because of more than 20 failures to obtain a water shutoff. Only one well was completed because of the extremely high temperatures and it was considered a rare piece of luck. The Buckbee zone has also lost its fascination for the wary operators, who are looking forward to the nearly virgin formations below. The big producers of the past two weeks are not to be ignored and few wells will be completed above 6000 feet during the next month.

Big O'Connell Well

Wilshire Annex Oil Company's Koontz 3, reported as a completion a week ago, was greatly under-estimated, having developed into one of the largest wells finished below the Meyer zone. This great producer cleaned up and flowed at the rate of 9900 barrels from the O'Connell zone at 6861 feet. Its action gave the O'Connell zone on top of the structure a big boost and paved the way for the deepening of several sluggish Buckbee zone wells.

Associated Oil Company's Green 3 has proved to be one of the most sensational completions of the year Coming in a week ago with an initial production of 7600 barrels the well has increased to 7900 barrels. The oil is showing an appreciable cut and a fairly low gravity, but the well has plenty of life. With a gas flow of only a half-million cubic feet it has probably the lowest gas-oil ratio of any producer of its size completed in California in several years.

Richfield Oil Company successfully placed Howard 3 on production with an initial roduction of 3700 barrels. The well was drilled to 6502 feet and completed in the O'Connell zone. The oil was 34 gravity and showed the remarkably low cut of one-tenth of one per cent. This company has not developed a large production in the field but has been successful in completing its few producers.

Universal Consolidated Oil Company continued its rapid pace completing O'Connell 4 as a 4000-barrel well in the O'Connell zone at 6532 feet. The oil was 34.2 gravity and clean. As in the case of most O'Connell zone completions which have included only the top of the formation the well came in with a minimum of effort and produced oil entirely free from water.

The large O'Connell zone completions of the previous week are still flowing at near the original rate, giving the zone all the earmarks of a major producing formation. In some of the wells, a part of the Upped zone was also included and in these producers the water cut has been far from negligible. In only one well which included both the O'Connell and Upper Clarke zones has the cut been extremely low. This is not regarded with alarm, however, and may have been caused by improper shut-off. Though no distinct break has been noted between the sands, there is a possibility that streaks of pale sand are present and are causing some of the water trouble. The cuts vary from four per cent. to 20 per cent., depending upon the location of the well and the efficiency of the cementing job.

George F. Getty made two successful casing tests during the week, one in Montgomery 22 and and another in Mitchell 26. The former was tested in the O'Connell zone at 6392 feet and flowed at the rate of 3400 barrels from a few feet below the shoe, while the latter flowed clean oil at a 2000-barrel rate from the same sand at 6386 feet. Although officially only water tests, the wells demonstrated that they will make good producers when drilled deeper into the sand.

Record Casing Set

Associated Oil Company apparently has broken two records in landing shut-off strings during the past week. A string of nine-inch casing was cemented at 7035 feet in Fulton 3, which had been drilled in the Upper Clarke zone to 7184 feet. So far as is known, this is the longest string of nine-inch casing ever run. The company cemented a string of 6⅝-inch casing at 7785 feet in Dallugge 7, eclipsing the best previous record with this particular size of pipe by several hundred feet, so far as is known. Dallugge 7 is bottomed at 7850 feet and will test the Lower Clarke zone.

O. J. Rohde's McAdams 2, completed two weeks ago as the first well in the

Upper Clarke sand, is still flowing 1300 barrels of clean oil. Located in the extreme eastern part of the field, this odd producer proves the Upper Clarke sand over a wide area.

The extremely high temperatures found in the lower part of the O'Connell zone and all of the Clarke zones do not seem to prevail in the eastern part of the field. While the development below 7000 feet has been more limited on the east side, it has not developed far less heat in proportion to the number of wells drilled.

Plymouth Oil Company is testing a body of oil sand at 7520 feet in Fred Roberts 1, in the eastern part of the field, but failed to obtain a water shutoff in the first attempt. The zone being tested seems to be an intermediate sand between the Upper and Clarke zones and does not exactly correspond to the formation producing in the Rohde well. These several layers of oil sand may mean a more composite formation nearer the center of the structure.

Associated Oil Company is still working with Clarke 2 in the Lower Clarke zone, but has made little headway toward making a producer of the discovery well in both the Upper and Lower Clarke zones. The hole was plugged back from 7922 feet, the present bottom, to 7775 feet, the cement drilled out to 7825 feet and the hole swabbed to 4500 feet. After standing a while, the water level increased very little. The company plans to drill out in stages and test.

The southwest part of the field, which has not produced satisfactorily in the Buckbee and Nordstrom zones, has shown little change. Oscar Howard's Hathaway 6 is coring in the Lower Clarke zone at 7750 feet, having cut a good body of shale over the sand.

Richfield Oil Company, after cementing 10 times in the Upper Clarke zone, has decided to cast its fortune with the still deeper sands and is drilling for the Lower Clarke zone at 7475 feet in Elliott 2. Heat balked all efforts to secure a water shutoff around 7100 feet.

The number of wells drilling in the O'Connell zone has jumped to 24, of which probably half will be tested in this sand. An additional 11 wells are cemented over the sand and three are ready for completion. Fifty wells have not yet reached the Meyer zone, 32 are drilling between the Meyer sand and 5000 feet, 31 are between 5000 feet and the Buckbee, six are either drilling in or ready to complete in the Buckbee and 24 wells are drilling below the O'Connell zone. Idle wells total 35.

Los Angeles.—Permits issued by the State oil and gas supervisor since January 1 total 458, as compared with 323 at the same time last year. Santa Fe Springs, Long Beach, Lawndale and Kettleman Hills have been chiefly responsible for the greater number this year. A tapering off during the remainder of the year is expected.

California Engineers Hold Meeting

Los Angeles.—A meeting of the Development and Production Section, California Division, of the American Petroleum Institute, was held here April 30, with an attendance of several hundred members and visitors. The following subjects, as written by the authors, were discussed:

"Explanation of Gas Conservation Law as Applied to Field Operations", by A. L. Weil, chief counsel for General Petroleum Corporation.

"A Survey of Factors Believed to Affect the Courses Followed by Drill Holes," by Martin Van Couvering, petroleum engineer.

"Practices for Drilling Straight Holes and Remedying Crooked Holes," by R. D. Elliott, manager of Oil Field Service Company.

Potrero

Los Angeles.—James Pollard's Community 1, a test of the extreme northwestern part of the Potrero structure, has made a very good showing and is flowing about 400 barrels of oil and 900 barrels of salt water from 4150 feet. The well was tested around the present depth, drilled to 4500 feet, and plugged back for another test. The gas pressure is satisfactory and it is believed that if a water shutoff could be obtained, the well would make a good producer.

Associated Oil Company has recemented Potrero 1 at 3822 feet, after an unsuccessful shutoff test of the 10¾-inch casing at 3510 feet. This well was tested several times around 3300 feet but was deepened to produce in the discovery zone.

Coalinga

Coalinga, Calif.—General Petroleum Corporation is slowly drilling ahead in Oschner 2, recently tested at 6850 feet, but is able to make only a few feet per day in the flinty formation around 6900 feet. The well is under control but there is evidence of a heavy gas pressure.

Standard Oil Company continues its aggressive development policy in the field, having run its active drilling operations to 12. Four new locations a week ago gave the company a representative spread over the North Dome and those completions should give definite information on a large block of the total holdings. No. 81, Section 11-22-17, is now the company's deepest drilling well, with a depth of 5450 feet. Three other wells are nearing 5000 feet, while a trio are past 2000 feet.

Milham Exploration Company still holds first honors among the list of wells started after the discovery of the field, Kennedy 1 having passed the 5650-foot level. Elliott 2 is drilling at 5375 feet, while Beal 1 is drilling in hard shale at 5440 feet. This trio of wells have made remarkable time and should be completed within a few months.

Shell Oil Company is drilling rapidly ahead at 5200 feet in Armstrong 1, the only active drilling well the company has in the field. The formation is running to tough shale.

Marland Oil Company, holder of several leases in the field, has reached 5000 feet in both Elliott 12-8 and Elliott 2-4, both in Section 2-22-17, on which the discovery well was completed.

Santa Barbara

Santa Barbara, Calif.—Santa Barbara County wildcats showed little change during the week. Interest has shifted from the more prominent ones of several weeks ago to those which more recently found streaks of oil sand and shale. Continental Oil Company has suspended operations in Franklin 1 at Carpenteria and will drill another well a few hundred yards north of the ocean. The Nevada-Standard Oil Company is testing its Anderson 1, in the Goleta district, at 3416 feet. About 150 feet of oil sand and shale were cut. Petroleum Securities Company is building a rig at Bishop 1, also in the Goleta area.

Long Beach

Long Beach, Calif.—Of the five wells completed during the week in the Long Beach field, only one maintained the standard set during the past month by more than a dozen new producers. The four remaining completions had a total initial production of less than 1100 barrels. The star well of the week was Otis Hoyt's No. 1, which came in with an initial production of 2250 barrels from 6775 feet. Field production dropped about 15,000 barrels, of which the natural decline accounted for 5000 barrels and the pinching in of deep wells the remainder.

Lawndale

Los Angeles.—The Lawndale field has been showing moments of promise—and also moments of extreme doubt—but a summary of the week's operations shows that it probably will be possible to complete pumping wells and possibly a few flowing producers among the cluster of derricks east of the discovery well.

Petroleum Securities Company has placed Brown 2 on the pump at 6295 feet and has obtained a production of about 300 barrels, showing a cut of only six per cent. The action of this well means that if the operators will be content to worry along with a small production, it may be possible to effect a water shutoff over some of the thicker streaks of oil sand and shale between 5800 feet and 6500 feet.

Ethyl Oil Company has been unable to make a commercial producer of O'Gorman 1, which has been tested for several days at 5850 feet.

Smith Development Company's Peck

4, located only a short distance from the discovery well, is making about 60 barrels of oil and three million cubic feet of gas from 5730 feet.

Pacific Western Oil Company's Howland 2, which flowed at the rate of 1000 barrels for a few days, is again off production and is being reamed to bottom in an effort to restore it to its former status.

Shell Oil Company has tested two of its wells, but obtained only a flow of salt water.

California Wildcats

Los Angeles.—The conservation program has not dampened the ardor of the wildcatter in the Los Angeles Basin as much as was expected, the major companies being among those content to hunt for new fields for the future. With at least a 100 to one shot against them, it does not seem harmful to seek new fields, even in this period of overproduction. The general policy, therefore, has been to let the search go merrily on. Prairie Oil & Gas Company, unofficially represented in California, is considering a test near the Montebello field, but has made no definite announcement concerning its plans. Other wildcat locations are expected within a few weeks.

Cat Canyon

Los Angeles.—The Winann Oil Company is preparing to immediately deepen their Fleisher 3 to the new deep zone discovered by the Palmer-Union Oil Company at Cat Canyon, Santa Maria.

The Winann Oil Company now has three wells with a production of approximately 1,000 barrels daily in this field. The present wells are producing from the 3600 foot level.

However, Palmer-Union Oil Company has just discovered a new producing formation and 95 feet of solid oil sand about 300 feet below the present producing zone, and tests show the oil to be of considerably lighter gravity. The sand is heavily saturated and the gas pressure is strong.

Oil has been produced in the Cat Canyon field for many years. The production has been from the Fernando formation, and the low gravity of the crude has retarded drilling to a great extent. Other production at Santa Maria has come from the Monterrey, and geologists have always claimed that a deeper and more prolific sand underlaid the Fernanda at Cat Canyon, and now, with a light gravity crude, this district will be the scene of considerable activity in the very near future.

Other companies, who either own land or have leases in this vicinity, are the R. & G. Oil Company, Marland Oil Company, Shell Oil Company, Union Oil Company, The Texas Company and Italo-American Petroleum Corporation.

CELEBRATING THE VICTORY

Left to right: E. A. Wetmore, auditor, Gulf Oil Corporation, New York; Judson Wood, legal department, VGO; J. O. Harper, geological department, Venezuela Gulf Oil Company, Maracaibo; Hoyt Sherman, assistant manager, VGO; Dudley Brightwell, land department, VGO; Mrs. Chester Crebbs, Maracaibo; W. L. Naylor, auditor, Gulf Oil Corporation, Pittsburgh; Chester Crebbs, winner of the 1929 yacht races, Maracaibo Yacht Club; Charley Schultz, land department, VGO; Ed Skinner, assistant manager, Richmond Petroleum Company and skipper of the "Richmond"

Chester Crebbs Wins Maracaibo Annual Boat Races

MARACAIBO, Venezuela, March 24 (By mail).—Chester Crebbs, general manager of the Venezuela Gulf Oil Company and skipper of the 18-foot Marconi-rigged knockabout "Wego," won the fourth and deciding yacht race of the 1929 season, which was sailed on Maracaibo Lake on Saturday, March 23. The "Wego," which crossed the goal-line 17 minutes ahead of her nearest competitor, was manned by Charley Schultz and Dudley Brightwell, both of the land department of Gulf Oil Corporation's Venezuelan subsidiary.

"Richmond," owned by Carl Newcomb, manager, and captained by Ed Skinner, assistant manager, Richmond Petroleum Company (Standard Oil Company of California) was served by W. E. Jeffers, engineer, and Bert Barricklo, land man, of the same company, as crew. "Richmond" finished second, followed by the "Lesgo," another Venezuelan Gulf Oil Company entry, which was manned by Hoyt Sherman, assistant manager, and J. O. Harper, geological department, and skippered by Judd Wood of the legal department.

The course, which covered an air-line distance of 10 miles, extended from Bella Vista, the Gulf's terminal, to a point in Maracaibo Harbor near the Richmond Petroleum Company's headquarters. The winner's time was two hours and 17 minutes. The race afforded several thrilling episodes, particularly at the half-way point, where all three boats hauled over

THE WINNING SMILE

(Center foreground) Chester Crebbs, general agent, Venezuela Gulf Oil Company, skipper of the "Wego" and winner of the Maracaibo Yacht Club's 1929 racing season

(Right foreground) Charley Schultz, of the land department of the Venezuela Gulf, a member of the victorious crew

(Center background) Carl Newcomb, general manager, Richmond Petroleum Company, owner of the runner-up "Richmond"

The "Wego," captained by Chester Crebbs, general agent, Venezuela Gulf Oil Company, winner of the Maracaibo Yacht Club's 1929 racing season, crossing the finish-line

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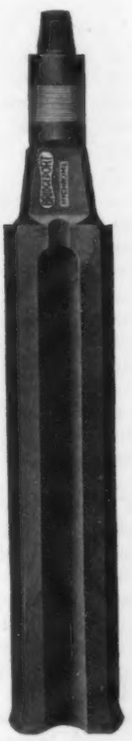

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at almost precisely the same instant, not more than arm's length apart, each threatening to foul or escape the other. The second leg of the race, which was sailed against a strong head-wind and which involved the risk of being swamped by a choppy sea, was won by masterly seamanship.

This race marked the close of the season, as Skipper Crebbs has won three out of four races run at weekly intervals during March, thereby acquiring permanent possession of the Maracaibo Yacht Club's coveted annual prize. This year the prize was a handsome Longines split-second recording wristwatch, presented by the Hughes Tool Company, Houston, Texas. The watch is a replica of those presented to Col. Lindbergh and Commander Byrd. The first and second races of the 1929 season were both won by the redoubtable Crebbs, who was also champion of the 1928 season; but the third race was won by the Richmond entry in walk-away fashion, which created keen interest in the fourth race.

Spectators followed the race over its entire course in the Venezuela-Gulf Oil Company's launch "Orson" and the Lago Petroleum Company's launch "Pan-Am." Mrs. C. M. Crebbs acted as hostess aboard the "Orson" and served tea after the race to a party which included the contestants and Mr. and Mrs. Howland Bancroft, Mr. and Mrs. C. T. Newcomb, Mrs. Judson Wood, and Messrs. W. L. Naylor, E. A. Wetmore, E. B. Dana and Roy Leigh. Bancroft is vice-president and general manager of the Lago Petroleum Company (Standard Oil Company of Indiana). Newcomb is at the head of the Venezuelan subsidiary of the Standard Oil Company of California. Naylor and Wetmore, of Pittsburgh and New York, respectively, are auditors representing the Gulf Oil Corporation. Mr. Dana is a member of the geological department of the Gulf. Mr. Leigh is associate editor of THE OIL WEEKLY, now engaged on an editorial survey of foreign oil operations.

B. R. Emrick, Burmah Oil Company, Ltd., Khodaung, India, spent the week in Houston, studying manufacturing and field methods.

Ernest B. Tracy, president, Louisiana Land & Exploration Company, headed a party of 28 men on a tour covering the Louisiana and Texas Gulf Coast April 26 — May 4. Properties of the company, including nine salt domes now being developed by The Texas Company and approximately 1,250,000 acres now undergoing geophysical exploration, were inspected by the party, which also made stops in Shreveport, Beaumont, Port Arthur and Houston prior to returning to New York May 4. The tour was made in two private cars.

JIM A. BERMINGHAM

formerly of Fort Worth and more recently of Denver, has been made vice-president in charge of production of the West Coast for The Texas Company. The election was held April 29 in New York by directors of The Texas Corporation, and the change is effective immediately. Bermingham arrived in Los Angeles with his family last week.

Bermingham's association with the producing and pipe line branches of the oil industry had its beginning at Spindle Top, and his advancements with The Texas Corporation's subsidiaries have been rapid since he resigned from the Simms Oil Company for a position with The Texas Company about January 1, 1927 as assistant manager of the Fort Worth division office. Bermingham was transferred from Fort Worth about November 1, 1928 to become vice-president in charge of the Rocky Mountain district operations of The Texas Production Company, with headquarters at Denver, and it was while serving in this capacity that he was selected for the California position.

C. C. Miers, superintendent of production in West Texas and New Mexico for the Republic Production Company, with headquarters at Pyote, Texas, was a business visitor in Dallas late last week.

Greenville Howard, a geologist in the Kevin-Sunburst field, told students of the Montana School of Mines that although the oil industry of the state now produces about five million barrels of crude per year with a value of nine million dollars, this should be doubled in the next five years. He stated further that in the Kevin-Sunburst field alone the estimated gas reserve was one trillion eight hundred million cubic feet, or enough to supply the gas needs of the state's seven leading cities for the next 60 years.

E. H. Daly, president of the Papoose Oil Company, has returned to headquarters at Tulsa after attending a conference in Dallas last week with officials of the Republic Production Company, an affiliated concern.

D. A. Niedemire, 29, an independent oil operator of Lima, Oklahoma, was fatally injured April 26 when his auto overturned near Fort Worth, Texas, and the body was sent to Cartersville, Ohio, for burial.

W. E. Harrison has been appointed superintendent of the Northern Division of production and drilling operations of the Richfield Oil Company, with headquarters at the Kern Front office of the company. Mr. Harrison succeeds Fred Abels, who recently resigned.

Lee Decker of Martin-Loomis Corporation, Long Beach, is spending a few days in Houston at Reed Roller Bit Company, Gulf Coast distributors for the Martin-Loomis weight indicators, prior to making a tour of Mid-Continent fields.

O. R. Seagraves was elected president of Dixie Gas and Utilities Company, subsidiary of United Gas Company, April 29. W. L. Moody, III, was elected vice-president, B. A. Hardey, vice-president, and N. N. Oille, secretary.

AMONG CHAMPIONS

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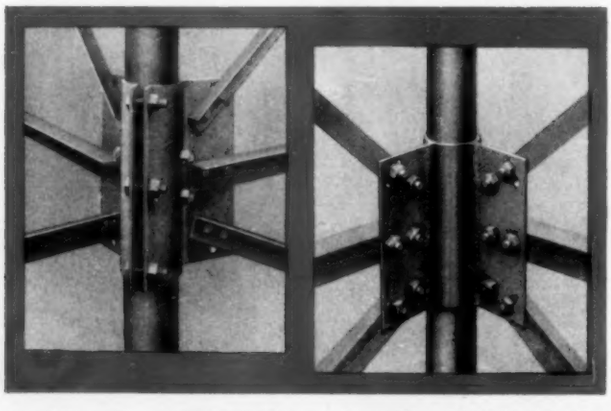

One of these features is the new Moore Clamp which joins the structural steel girts and braces with the seamless steel pipe leg sections. This clamp has a solid body of rolled steel plate. It is convenient to use and makes a highly efficient joint.

The Moore Champion Derrick conforms to A. P. I. standards

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With Our Friends in Foreign Fields

At left—oil party aboard steamship "Orinoco," enroute Curacao to Panama, April 13, 1929

Left to right—W. L. Naylor, auditor, Gulf Oil Corporation, Pittsburgh; G. A. Weaver, geologist, Orinoco Oil Company; E. S. Brown, drilling superintendent, Bermudez Company, Guanoco, Venezuela; J. K. Walsh, production department, Venezuela Gulf Oil Company, Lagunillas, Venezuela; Roy E. Leigh, Foreign Representative, The Oil Weekly, now on a world tour; Mrs. Isabel Millard, wife of Wm. J. Millard, consulting geologist, The Texas Company; H. S. Collingham, warehouseman, Orinoco Oil Company; Chester A. Baird, subsurface geologist, Venezuela Gulf Oil Company, Maracaibo; J. W. Garrett, driller, Union National Petroleum Company; Mrs. Kenneth Wright, wife of the drilling superintendent for Trinidad Leaseholds, Ltd., of Trinidad, B. W. I.; R. E. Dukich, drilling foreman, Venezuelan Oil Concessions, Ltd., Lagunillas, Venezuela; A. E. Bush, stores department, Colon Oil Corporation, El Cubo, Venezuela; G. E. Daniels, inventory man, Caribbean Petroleum Company, Maracaibo

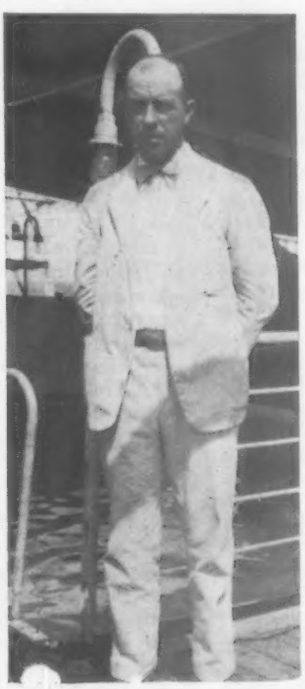
At right: left to right—Miss Mabel Witherup; E. A. Wetmore, auditor, South American Gulf Oil Company, New York; J. Sturges, representative of E. I. Dupont de Nemours Company; W. L. Naylor, auditor, Gulf Oil Corporation, Pittsburgh; Mrs. Chester Baird; Chester A. Baird, subsurface geologist, Venezuela Gulf Oil Company, Maracaibo, Venezuela

THE passenger list of the Hamburg-Amerika liner "Orinoco," on her westbound trip reaching Cristobal April 17 contained the names of more than a score of people prominently connected with South American oil operations. Twelve different companies were represented, including the Gulf Publishing Company, publishers of THE OIL WEEKLY.

Gulf Oil Corporation contingent was the largest, including as it did representatives of the parent company and the Venezuelan and Colombian subsidiaries. W. L. Naylor, auditor, of headquarters office at Pittsburgh, was en route from Maracaibo, Venezuela, to Cartagena, Colombia, accompanied by E. A. Wetmore of New York, auditor for South American Gulf Oil Company. Chester A. Baird, subsurface geologist for Venezuelan Gulf Oil Company, at Maracaibo, and Mrs. Baird were traveling to the United States on holiday; and J. K. Walsh, of the production department of the same company was returning home after a period of service in Lagunillas field.

The Shell group was headed by F. J. Shaver, formerly field manager for United British Oilfields of Trinidad, Ltd., accompanied by Mrs. Shaver and their two small sons. Shaver was returning to California to resume his connection with the Shell Company after having completed a two-year tour of duty in Trinidad. R. E. Dukich, drilling foreman for Venezuelan Oil Concessions in Lagunillas field, and Mrs. Dukich were en route from Venezuela to spend their triennial leave in California. Caribbean Petroleum Company and Colon Oil Corporation, Shell subsidiaries, were represented respectively by G. E. Daniels, inventory man, and A. E. Bush, stores department. Daniels was travelling to California to spend his long leave; and Mr. Bush, whose home is in Bath, England, was devoting his annual vacation to a sea-trip to Panama and return.

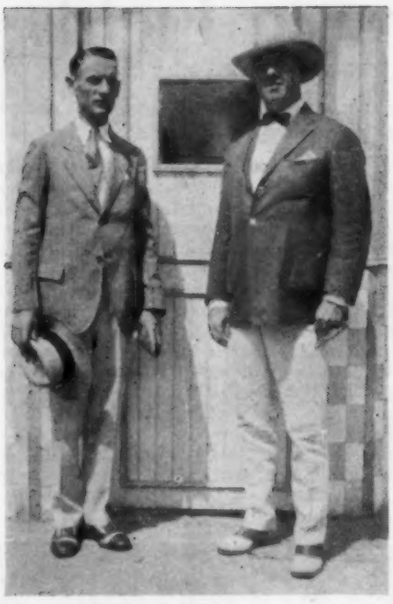
W. J. Haley, manager of refineries, Standard Oil Company of New Jersey



F. J. Shaver, field manager, United British Oilfields of Trinidad, Ltd.

Orinoco Oil Company, a subsidiary of The Pure Oil Company, was represented by G. A. Weaver, geologist, and H. S. Collingham, warehouseman, both of Maracaibo, were en route to the United States on leave.

Mrs. Isabel Millard, wife of Wm. J. Millard, consulting geologist, was en route from eastern Venezuela via Cristobal and New Orleans to her home in El Paso, Texas. Mrs. Millard, who has probably penetrated more deeply into the unexplored regions of the South American continent



W. L. Naylor, auditor, Gulf Oil Corporation, Pittsburgh, and E. A. Wetmore, auditor, South American Gulf Oil Company, New York

than any other North American woman, has been with her husband on an extensive geological survey of Eastern Venezuela and the Orinoco Delta, undertaken on behalf of The Texas Company. Millard expects to return to his headquarters in New York during May.

E. S. Brown, drilling superintendent for Bermudez Company, a subsidiary of the General Asphalt Company of Philadelphia, was en route from Guanoco, the Asphalt Company's oil and asphalt project in Eastern Venezuela, to California, on six months leave.

J. W. Garrett, a driller connected with Union National Petroleum Company, which has been engaged upon a wildcat operation in Western Venezuela, was traveling to his home in California, also on leave.

Mrs. Kenneth Wright, wife of the drilling superintendent for Trinidad Leaseholds, Ltd., at Forest Reserve, Trinidad, was en route to California, with the intention of visiting friends and relatives at Los Angeles before returning to rejoin her husband in Trinidad.

Roy E. Leigh, special foreign representative of the Oil Weekly, was en route from Venezuela to Colombia. He disembarked at Cartagena, from which point he expected to fly inland to visit the oil fields and exploratory operations at Barranca Bermeja, Puerto Wilches, and elsewhere. From Colombia, he will go to Eucador, Peru, Bolivia, Argentina, and Brazil, making an editorial survey of the producing and prospective oil fields of all those countries before returning to the United States later in the year.

Miss Mabel Witherup, of Franklin, Pa., was returning to her home after an extended visit with her brother, M. J. Witherup, general manager of Venezuela Atlantic Refining Company of Maracaibo.

While in Curacao, the members of the "Orinoco" party met W. J. Haley, manager of refineries for Standard Oil Company of New Jersey who was en route from Maracaibo to Trinidad. The West India Oil Company, a Standard Oil Company of New Jersey subsidiary, is building small topping plants at both those points.

J. R. Brightwell, superintendent of the Venezuela Gulf Oil Company's deep-sea loading station at Las Piedras, Paraguana Peninsular, is convalescing from an appendix operation which was performed at the Gulf Company's base hospital at Bella Vista, near Maracaibo, on March 25.

Major H. Standish Ball, managing director of the Central Area Exploitation Company, Ltd., owner of the Hombre Pintado field, Maracaibo district, has arrived in New York from Maracaibo for a business conference with Sir Arthur du Crox, chairman of the board of directors of the Central Area Exploitation Company, who is enroute from London to New York.

Design and Construction of Oil and Gas Pipe Lines
Continued from page 51)

cylinders, moisture having been trapped out of gas before entering compressor intake.

Recent practice is to weld all piping used in connecting pumping stations to tankage and lines, fabricating the large manifolds in welding shop, which can be erected by a minimum amount of skilled labor. The size of oil pumping stations range from small field stations of 25-horsepower to trunk line stations of 3000-horsepower of which approximately 70 per cent. are Diesel engine driven pumps, balance electric, gas engine or steam. The Diesel engine is as reliable as any other kind of power. Regardless of power, source or size of stations, pipe line companies are as careful as to the cost of power as any industry. There is 45,000 miles of oil trunk lines, six inches and up, in use today, delivering approximately two million barrels of oil to refineries, and ships daily, which handle this amount on a weighted average of 10 times before delivery. Another 46,000 miles of line, six-inch and under are gathering approximately 2,500,000 barrels from producer and delivering to trunk lines, railroad tank cars and refineries. Oil is not only measured from station to station but in storage is measured daily. Line walkers cover lines regularly daily. Pump station operation is checked daily for efficient operation. Pu[illegible] lines, as a group, are one of the large[illegible]sers of the Diesel engines and all tim[illegible] ready to adopt new methods to improve [illegible]perations.

Modern Methods of Deep Well Drilling
(Continued from page 50)

ing days. The cost of the well was $141,500.54, or at the rate of $16.60 per foot.

Preparations are being made to drill four wells to this deep pay. Three of them are equipped with cable tools and one with rotary, and all have electric prime movers.

The rotary method is used in all drilling operations in Arkansas, Louisiana and the Gulf Coast of Texas. Wells are drilled and completed and made ready for production by this method. Re-work jobs on all wells are done by use of the rotary.

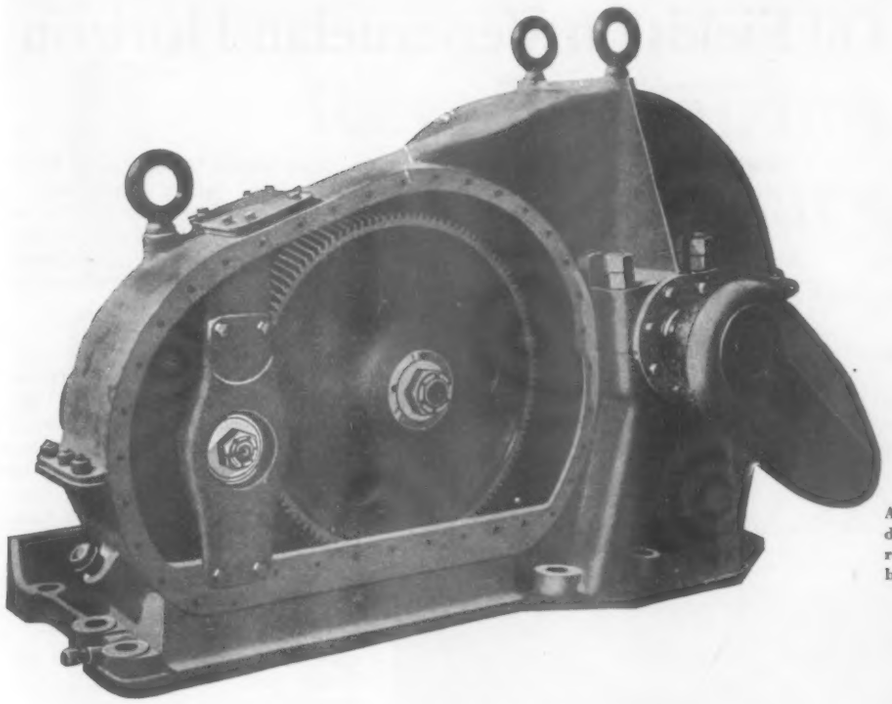
The cost of drilling throughout the Gulf Coast area varies a great deal due to the different depths at which oil is found. For instance, wells at a depth of 3800 feet will cost about $24,000, while wells about 5000 feet deep will cost about $40,000. The maximum cost for wells 5000 to 6000 feet will not average more than $10 per foot and wells of about 3000-foot depth will average about $6 per foot.

In North Louisiana and Arkansas the maximum depth is about 3500 feet and the cost of drilling is about the same as in the Gulf Coast area.

The problem of drilling wells to depths as great as 10,000 feet is often discussed and, in a number of instances, preparations have been made to drill to these depths. Those intimately acquainted with drilling often speculate relative to the improvements over present drilling equipment that will be necessary to reach that depth:

1. It will be necessary to strengthen the derricks.
2. The power plants will have to be enlarged.
3. Casing will have to be developed to withstand extreme collapsing pressure and joints for holding long strings of casing together will need to be improved.
4. Drill pipe for use in rotary drilling will need to be improved.
5. Methods of cementing will need to be modified.
6. Improvements will be necessary in all drilling equipment such as slips which hold the drill pipe drilling lines, drill bits, high pressure slush pumps, design and material in brake flanges in rotary hoists.
7. Better knowledge of drilling, in order to prevent crooked holes, will require additional information on the action of various bits in different formations, and a better understanding of the cause of crooked holes.

W. G. Swaney of the Kerotest Manufacturing Company, Pittsburgh, is convalescent after undergoing a very serious operation at the St. Francis Hospital, Pittsburgh.



A Westinghouse-Nuttall double reduction oil well unit with side plate removed showing the extreme accessibility for changing the gear ratio.

50 Units in One!

THE exclusive "change gear" feature of Westinghouse-Nuttall double-reduction oil well gear units provides a distinctively simplified arrangement for obtaining the variety of operating speeds required for the various conditions encountered in different wells or for changes in the condition of the same well.

In each of the double-reduction units—OP-11, 13, 14, 15 or 16—more than fifty different reduction ratios can be used, and the prime mover will operate at its most efficient speed with each of them. A gear and pinion for a different ratio—the only additional items required—can be obtained on short notice and the complete change made in less than two hours without even disconnecting the well or prime mover from the unit.

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Say you saw it in The OIL WEEKLY

Ten Potential Oil Fields on Venezuelan Horizon

(*Continued from page* 58)

Great hopes are placed on the outcome of 8, now standing cemented; and on 5, in which an effort will be made to create an artificial crevice in the hard oil-bearing rock between the depths of 1640 and 1820 feet.

Totumo Seepage

Totumo seepage is found at the base of the Perija Mountains and is one of a large number of exudations of oil and asphalt found in a long line paralleling these mountains. They seem to occur al-

Zambapalo 2, discovery well of the Totumo (Rio Palmar) field. Total depth 1266 feet

ways at about the same elevation above sea level along the contact of the igneous rocks forming the mountain range with the sedimentary deposits of the Palmar valley. In fact, other active seepages are to be found within a very few miles of the field; and the well known La Luna seep is less than 10 miles south of the Totumo operation.

No true sands have as yet been found although it is doubtless the hope of the company to find suitable reservoir formations as development extends out into the valley and away from the mountains. In fact, only three different formations have as yet been encountered in the Totumo wells. The upper layer is of soft sedimentary character, very thin near the foot of the mountains and of increasing thickness in wells drilled out in the edge of the valley. Below this recent deposition are found extremely hard igneous and metamorphic rocks.

Sometimes, as in well 3, this rock is found to be highly fractured. Elsewhere, and at other depths, it is unbroken, as shown in the accompanying photograph of a core cut from well 7. These rocks are so hard as to almost defy the rotary drillers, and their colleagues of the "up-and-down" persuasion are not able to make much more progress.

Drilling Methods

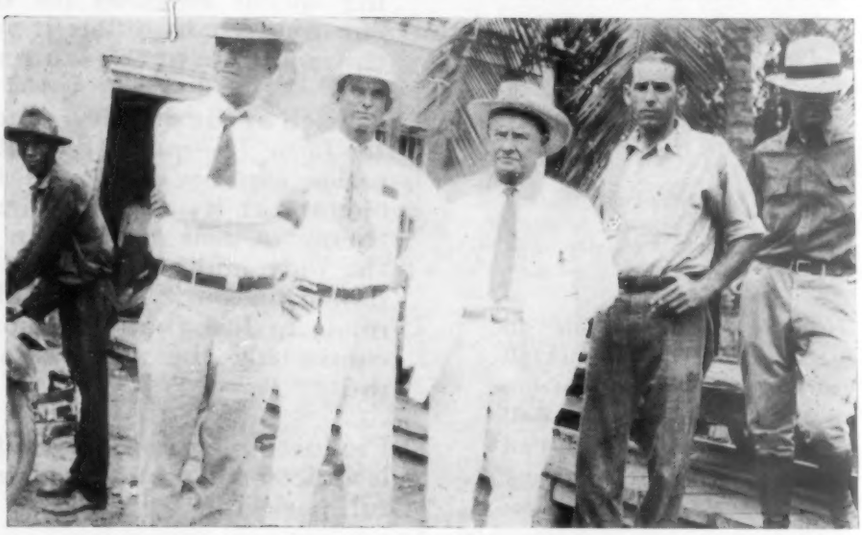
Cable tools are used in those wells nearest the mountain, where the overburden of sedimentary formation is thin; but out in the valley, where a greater thickness (ranging up to 2500 feet in wells already drilled) of soft formation must be penetrated, the rotary method is used. Fish-tail bits are run in the soft over-burden but rock bits are resorted to as soon as the hard rock is encountered. The drillers state that the rock is so hard at certain levels, that the bit metal wears away about as fast as does the rock.

The Creole Petroleum Corporation owns a similar proposition at Inciarte, about 15 miles west of La Paz field and about equidistant between Totumo field and Venezuela Gulf Oil Company's prospective oil field (Amana) in the District of Mara. As in the case of the Totumo properties, the Inciarte proposition was at one time owned by Caribbean Petroleum Company, which abandoned it after drilling eight very costly wells into hard granite and basalt. Three of these tests reached depths of approximately 2000 feet, and the others were abandoned at depths less than 1000 feet.

Incirate Seepage

Inciarte boasts one of the largest asphalt and oil seepages in Western Venezuela, its flow covering more than 25 hectares. It is the only seepage in Maracaibo Basin from which asphalt has been mined on a commercial basis. United States and Venezuelan Company, a sub-sidiary of Uvalde Asphalt Paving Company of Texas, is said to have recovered some 100,000 tons of asphalt during 1901-1905. A small refinery was built, which had a capacity of around 300 tons per day. Crude and refined asphalt were shipped in sacks and barrels over a narrow-gauge railway from Inciarte to Carresquero, a river port on Rio Limon, a distance of 42 kilometers. This mining operation was brought to a close by the Venezuelan government, which seized the concession and abandoned the works after an ineffectual attempt to continue exploitation.

Apart from the famous Mene Grande seepage, covering about four



H. I. Fry, assistant manager; O. S. Shaw, driller, Totumo field; E. Stuyvesant, driller, Totumo field; D. E. Johnson, refinery superintendent; S. H. Cathcart, subsurface geologist.

Mr. Johnson is superintendent of the West India Oil Company's new topping plant at Arreaga, near Maracaibo. Messrs. Fry, Shaw, Stuyvesant, and Cathcart are members of the Creole Petroleum Company organization

Sheldon-Burden Flush Joint Drill Pipe and Tool Joints

Revolutionizing Difficult Rotary Drilling

especially in high pressure areas and in caving formations

The Sheldon-Burden rotary drilling system eliminates blowouts, wild wells, and danger of fire. No matter what the rock pressure may be, you can drill and fish with security and confidence.

It saves mud. In Winkler County, Texas, it saved one company as much as $15,000 a well in mud costs alone.

High pressure wells may be drilled in with light mud or even oil as a circulating medium with no danger of a blow-out.

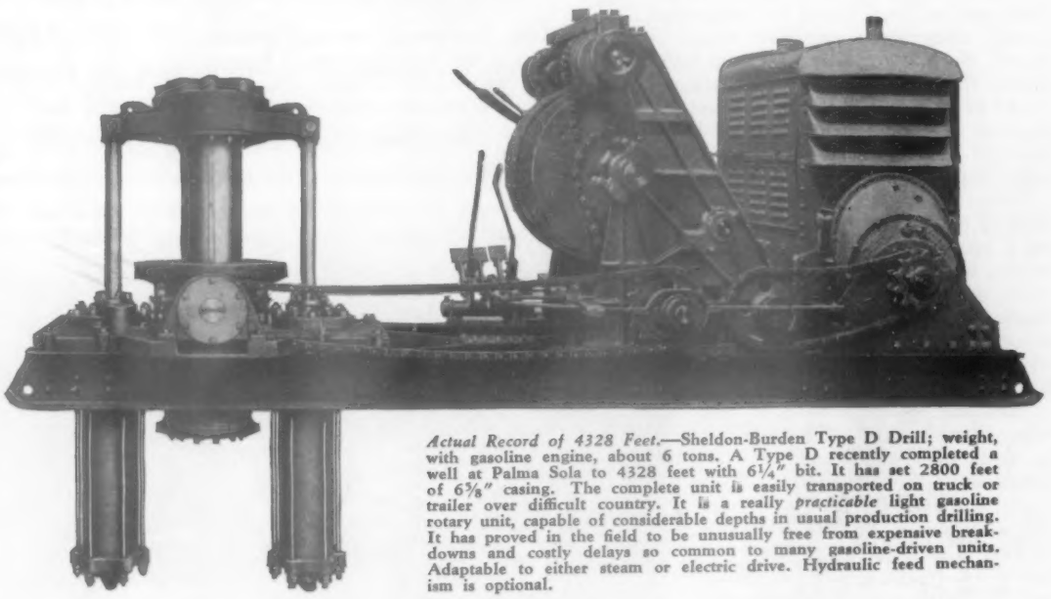
An inch larger flush joint pipe can be used in a casing string than is possible if collared pipe were used. This feature is particularly important in deep well drilling.

The Sheldon-Burden rotary drilling system makes it possible to put back pressure on a formation, thus preventing heaving. Many times it will stop caving.

Having no callars to pass, flush joint pipe is not easily stuck.

The Sheldon-Burden rotary drilling system can be used with the type of rotary rig you are now using.

Flush joint pipe will do anything regular collared pipe can do and a lot more. It costs but little more. Why not use the best and be prepared? Investigate!



Actual Record of 4328 Feet.—Sheldon-Burden Type D Drill; weight, with gasoline engine, about 6 tons. A Type D recently completed a well at Palma Sola to 4328 feet with 6¼" bit. It has set 2800 feet of 6⅝" casing. The complete unit is easily transported on truck or trailer over difficult country. It is a really *practicable* light gasoline rotary unit, capable of considerable depths in usual production drilling. It has proved in the field to be unusually free from expensive breakdowns and costly delays so common to many gasoline-driven units. Adaptable to either steam or electric drive. Hydraulic feed mechanism is optional.

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Seepages of oil and asphalt which led to the discovery of the Mene Grande oil field by the General Asphalt Company, which later sold the property to the Caribbean Petroleum Company, retaining an over-riding royalty interest

square kilometers, and La Luna seep, referred to above, the State of Zulia boasts two other notable exudations of oil and asphalt at El Mineto and Pauji. Excepting Concepcion, practically all oil fields of Venezuela, actual and prospective, are associated with surface exudations of oil and asphalt.

Interior Surveys

It is reported that one of the major companies is engaged in negotiations with the Venezuelan government for permission to undertake an aerial survey of the more remote interior districts, in an effort to discover other seepages which have not yet been found by prospecting parties using more primitive means of travel. Such seepages as Bermudez Lake, Mene Grande, Totumo, and Inciarte would be visible from the air; but smaller deposits of the type which abound in the State of Zulia probably would not be so easily found.

Creole Petroleum Corporation is drilling below 5000 feet in its Garcia 1, located on the Maritime Strip, on the western shore of Maracaibo Lake, directly across the lake from Lagunillas field. This strip embraces nearly half of the shore line of Maracaibo Lake, being one kilometer wide and extending around the southern part of the lake, from La Ceiba, 25 miles or so south of Mene Grande, on the southeast, to the mouth of Rio Palmar, on the northwest. Equipment has arrived for drilling a second well at a point about midway between Rio Negro and Rio Palmar; and a third test will be commenced within the next 60 days.

New Field in Eastern Venezuela

Unusual interest attaches to Creole Petroleum Corporation's exploratory operations near Maturin, in Eastern Venezuela. Drilling operations have been in progress for a number of years, and a comprehensive geological and geophysical survey of the district has been made during the last three years. Some 14 wells have been drilled to various depths, the maximum being around 3000 feet.

Moneb 2, completed during 1928, is said to be capable of producing from 200 to 300 barrels of oil per day. Another producer is good for 100 to 200 barrels daily, and two other wells make from 50 to 100 barrels per day each. The present potential production of the field is estimated at around 500 barrels daily. No oil has been exported yet, and production is restricted to fuel requirements. Only heavy asphaltic oil is found in this district, the average gravity being around 14 degrees A. P. I. Production is found in a sand which carries little or no gas pressure. The proven area is in the shape of a rectangle, about five miles long.

Three drilling rigs are in operation, and a fourth is expected to arrive shortly.

This is another field which could be opened up in comparatively short order, if production were available in sufficient quantity. Only a short pipe line would be required to move oil to tide water.

Guanoco Field

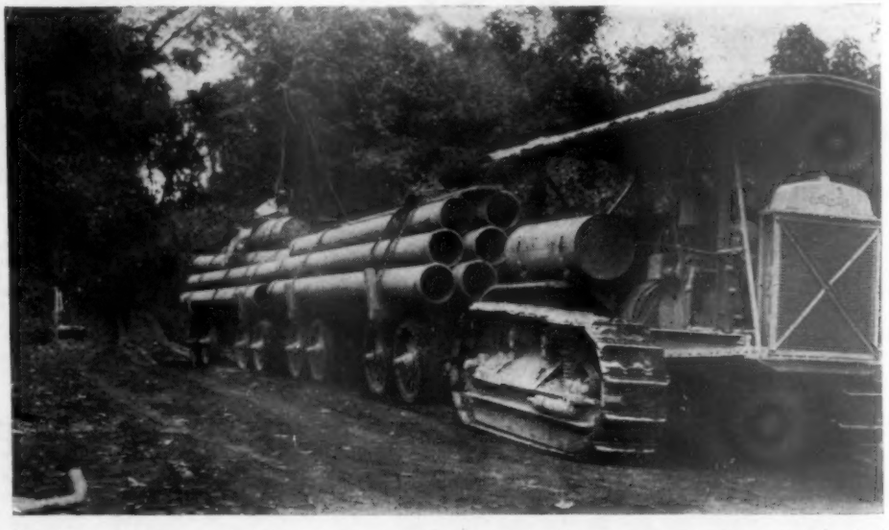
Maturin, or Quirequire field, as it is sometimes called, is located about 25 miles southwest of Bermudez Asphalt Lake, where Bermudez Company, a subsidiary of General Asphalt Company, Philadelphia, has been engaged for several years in the production of a heavy (9-10°) black asphaltic oil which is used in connection with its asphalt operations. Discovery occurred in 1913, but shipments were not commenced until 1926. The oil is so heavy that it must be heated before it can be handled.

Bermudez Company is producing from 1000 to 1200 barrels of oil per day from nine wells which range in depth from 500 to 1500 feet. Only one rig is in operation, and about 1000 acres of proven land remain to be developed.

The Maturin bar impedes shipping in about the same manner, but to less extent, as the Maraciabo bars. Ships drawing 18 feet of water can safely cross the bar at high tide, and navigate the San Juan and Guanoco Rivers up to the asphalt company's port at Guanoco. Ocean-going tankers are loaded to half capacity at Guanoco, and routed via Curacao where royalty oil accruing to the asphalt company from Caribbean Petroleum Company's operations at Mene Grande is taken aboard to fill out the cargoes.

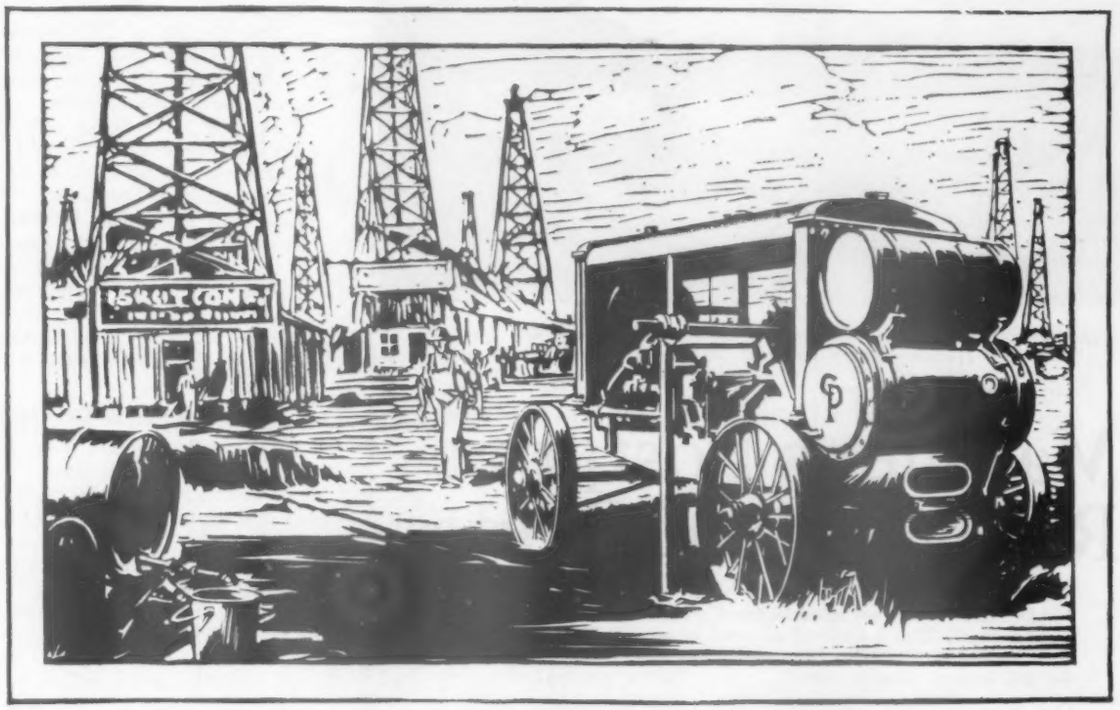
Standard of California Production at Urumaco

Urumaco field, in the State of Falcon, about 35 miles northeast of the Dabajuro field and about 60 miles northeast of El Mene field, is regarded as one of the most promising areas in Western Vene-



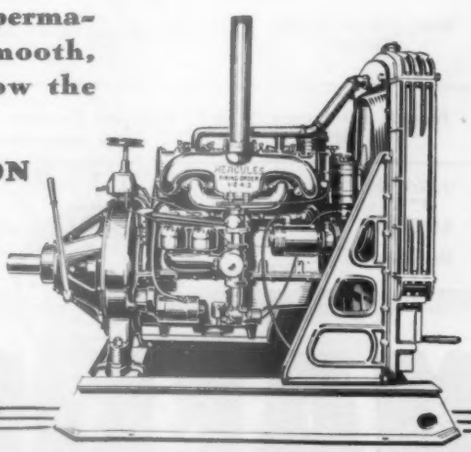
Caterpillar tractors and eight-wheel wagons are required to move materials over the bad roads of Venezuela

Air Lift Compressors, too, Are Hercules Powered



THIS Chicago Pneumatic High Pressure Portable Compressor, direct connected and Hercules powered, introduces another oil field application of heavy-duty Hercules Engines. In use by the Marland Oil Company at McCamey, Texas, this outfit has proved reliable, safe and economical for testing the capacity of wells on air lift before installing permanent stations.

Hercules Engines are also at work on permanent air lift compressors where their smooth, steady operation provides power to flow the deepest wells.



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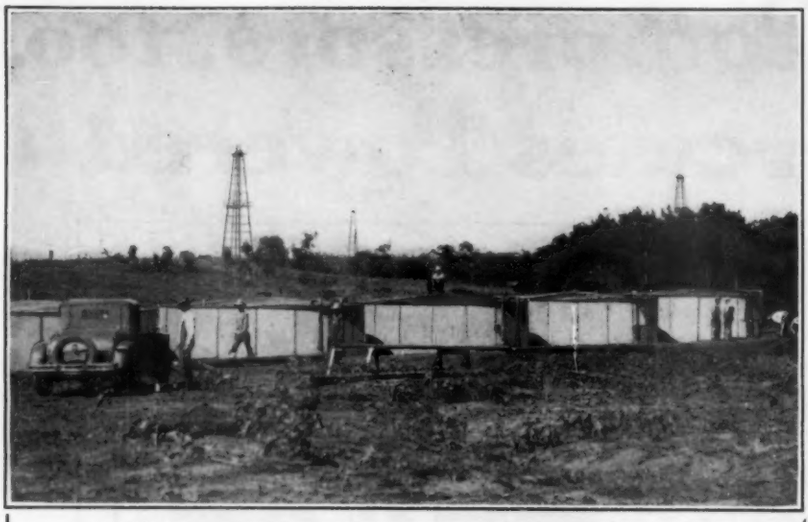

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zuela. This concession is operated by Richmond Petroleum Company (Standard Oil Company of California) for joint account with Beacon-Sun Oil Company (Sun Oil Company and Standard Oil Company of New Jersey.)

The discovery well, a large gasser which also flowed some oil and salt water in August, 1926, was lost by fire. El Mamon A-1, the second well, was brought in on Christmas Eve, 1928, with an estimated initial production of 2100 barrels of light oil per day from 3437 feet. Five other wells are being drilled, as shown in the accompanying drilling report.

This new field being only about 10 miles from the southern shore of the Gulf of Venezuela, it will not be difficult to construct a pipe line outlet. However, construction of loading facilities may be very expensive, as conditions on this coast are unfavorable for berthing ships.

Creole Petroleum Corporation owns promising acreage on the flank of this structure, although the oil-bearing formation is believed to lie at great depth under its property.

Production at Dabajuro

American-British Oil Company, controlled by Creole Petroleum Corporation and operating on lands contributed by British Controlled Oilfields, Ltd., is operating two rigs in fulfillment of contract obligations in Dabajuro field, another area known to be productive in uncertain quantities, located about 20 miles northeast of El Mene field and about 40 miles southwest from the new field at Urumaco.

To provide fuel for drilling boilers, Las Palmas No. 3 was finished as a gas well at 834 feet in June, 1928. Las Palmas 1, the discovery oil well, was brought in August 3, 1928, with an initial production of around 100 barrels per day from 2095 feet. The third well of the series was also finished in the shallow gas sand; but a deep test was made in El Zamuro 1, which was drilled to 4356 feet, at which point it was abandoned in January, of this year. Drilling is being continued in Las Palmas 4 and 5. A fishing job has delayed operations at a depth of 2817 feet in the former well, and the latter has reached a depth of 1525 feet.

No oil has been shipped from Dabajuro field, as pipe line facilities are not available. If when production is developed in commercial volume, the company, presumably will have three possible outlets for disposing of its oil. By laying about 10 miles of pipe, it can tie into Central Area Exploitation Company's Hombre Pintado-El Mene line, through which Hombre Pintado production is shipped from El Mene to Alta Gracia, where it is picked up by Shell tankers. This would involve arrangements with both the Central Area Exploitation and British Controlled Oilfields Companies. Another possibility would be to lay line approximately paralleling the latter's El Mene-Alta Gracia line, but such a line would have its outlet inside Maracaibo bar. About 30 miles of line would be required to reach the north coast on the shore of the Gulf of Venezuela. However, this would doubtless involve the use of a submarine loading line, as the coast is of forbidding

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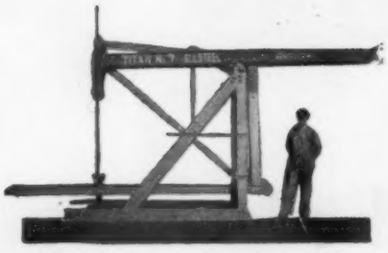

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character and deep water is not available inshore.

Small Production at Hombre Pintado

Hombre Pintado field, situated about midway between El Mene and Dabajuro fields, is owned by the Central Area Exploitation Company and operated by Creole Petroleum Corporation. Three small wells are producing a total of around 75 barrels of light oil per day, which is sold to the Shell and delivered through the British Controlled Oilfields, Ltd.'s pipe line from El Mene to Alta Gracia, Shell's loading station on the eastern shore of Maracaibo Lake. Hombre Pintado was discovered in 1927, since which time five wells have been drilled to various depths ranging up to 3000 feet. Nos. 1, 2 and 5 are producers, and arrangements are being made to test 3 at 2808 feet. No. 4, a deep test, is temporarily shut down at 3033 feet. Before drilling was resumed, this well yielded around 25 barrels of oil per day from 2165 feet.

Puerto Cabello Production

Operations of North Venezuelan Petroleum Company (allied with Trinidad Leaseholds, Ltd., of Trinidad, British West Indies) at El Mene del Salto, in the eastern part of the State of Falcon, are believed to be nearing the commercial stage. Nine or 10 wells have been drilled to various depths, the maximum being around 2000 feet, in which light oil (36 to 40 degrees A. P. I.) has been found in quantities ranging up to 400 barrels per well per day, initial. Three rigs are in operation, and two wildcat wells are being started, one at a point on the Caribbean coast about 20 kilometers north of the proven area and the other at Chichiriviche, near the mouth of Rio Tocuyo southeast of the field.

Presumably, if commercial production is found in either of these wells, loading facilities will be installed so that cargo shipments may be commenced. This will involve the construction of a short pipe line, as the new field is less than 10 miles from the coast, being about 50 miles northwest from Puerto Cabello.

Gulf has a Promising Wildcat

Venezuela Gulf Oil Company is drilling a second well in the District of Mara, about 25 miles northwest of the La Paz field, following the discovery of oil in small quantity in its Amana No. 1 during 1928. The discovery well is being operated only to supply fuel for the second test, Amboy 1, now being drilled.

Oil from the Amana well is of around 28 degrees A. P. I. gravity, and comes from several oil-bearing formations found between 3300 feet and 4182 feet, the total depth of the well.

It is reported that equipment may be ordered soon for drilling a deep test on the outlying properties of Venezuelan Gulf Company in the Bolivar Lake Shore district, probably on the flank of La Rosa-Ambrosio structure, during the last half of 1929. Extra heavy rotary equipment will be used, and it is said to be the plan of the company to drill to a depth of 8000 feet or more, or until the ultimate capacity of the rig has been reached.

This same company is testing at 5461 feet in its Carmelo wildcat, located on

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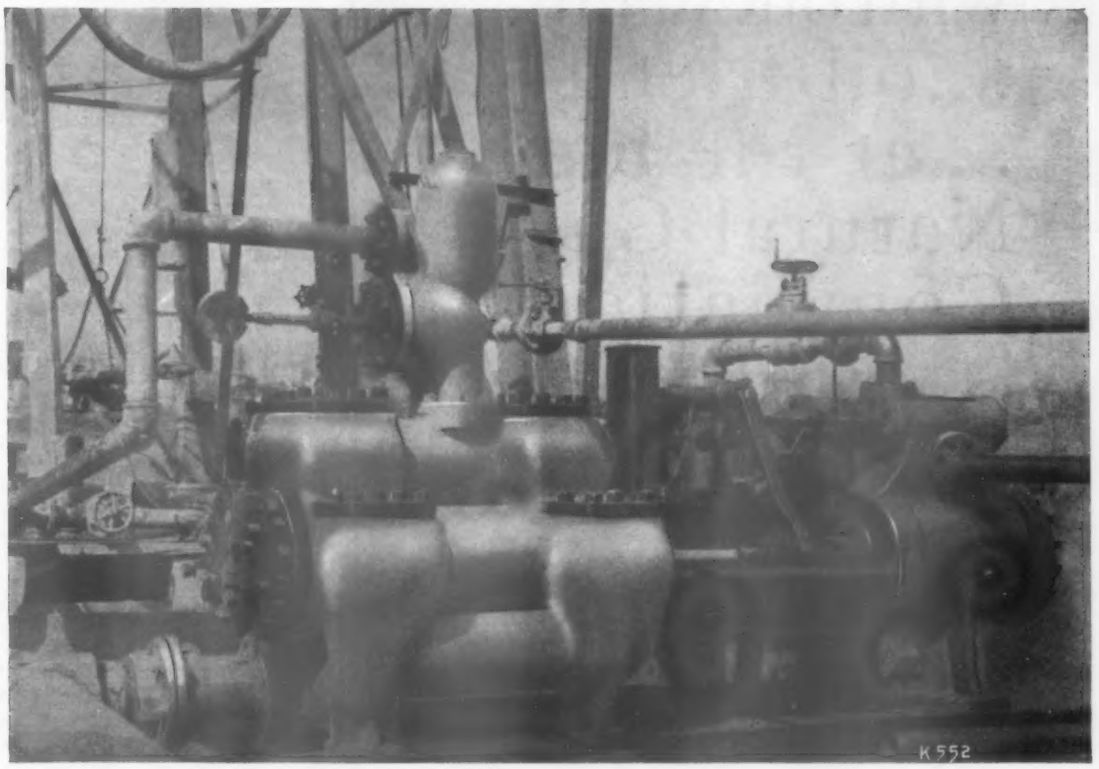

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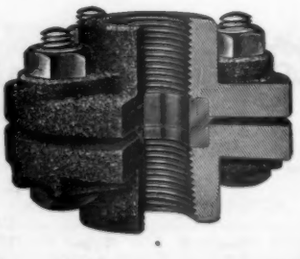


the property of the Omnium Development Company, about 18 miles southwest from Maracaibo and about equidistant between the Concepcion and La Rosa-Ambrosio fields. The Omnium Development Company drilled two dry holes on this property before it was taken over by the present operator. However, slight showings of oil were found. Lessame 1 was abandoned in May, 1927, at a total depth of 2463 feet. No. 2 was completed early in 1928 at a total depth of 3200 feet.

Venezuelan Gulf Company is approaching a depth of 4400 feet in its Bernal wildcat, located on the western lake shore, at Punta Bernal, near the mouth of the Palmar River.

Pure Oil Company's Prospects

Orinoco Oil Company, South American subsidiary of the Pure Oil Company, is carrying out a very interesting deep test in the District of Mara, at a location about 10 miles northeast of La Paz field. A test of oil sands interspersed with shale encountered at around 4900 feet and penetrated to a depth of 5374 feet yielded around 350,000 cubic feet of gas, with an indicated potential production of from 100 to 200 barrels of 31 gravity oil per day. When closed in the well showed a casing-head pressure of around 700 pounds.

Not being satisfied with so small a production at so great a depth, the company resumed drilling with the intention of making a further test of around 900 feet of the oil-bearing sands and shales at a depth of 5800 feet. However, a fishing job occurred at around 5700 feet. A side-tracking operation is in progress at around 5550 feet.

In view of the production found at 5374 feet, this is known as the deepest producing well in South America.

Rotary Fishing and Fishing Tools

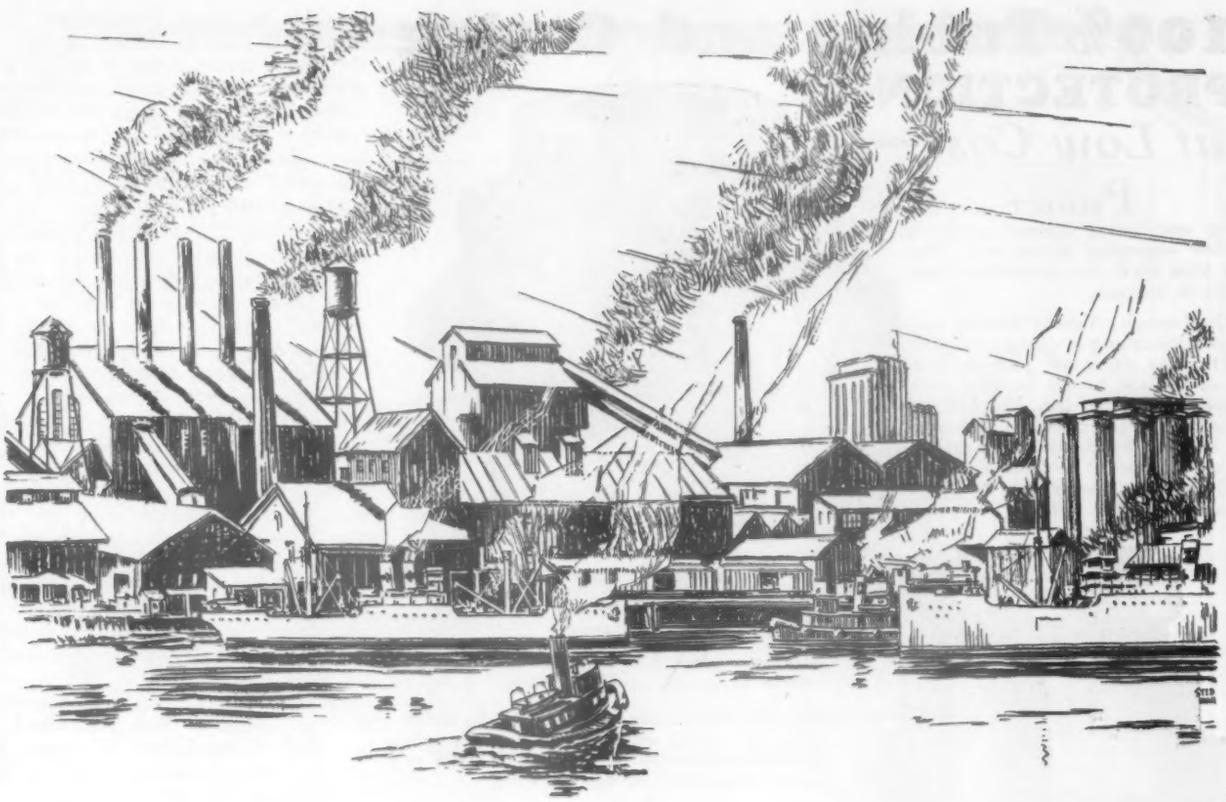
(Continued from page 46)

that tool appeared like a myth. Yet, even so, any drilling contractor always lends his fishing tools for he, too, may be out searching the next hour for an especial type of fishing tool for his rig to fish with.

The fishing tool service organizations that are maintained in standard tool work are of inestimable value; in rotary work, the same is done to a limited extent.

An extended service of fishing tools for rotary work should be as fruitful as in standard tool work, for even though a rig may be fully equipped with every kind of tool for any kind of work, they are seldom used, and are frequently lost. It is also a matter of expense to move the tools about with the rig, to care for them to keep them from rusting and getting out of order, and to house them. A tool may not be required for several years, and meanwhile, the expense of moving that tool around during this time may exceed the cost of renting a tool when it is needed.

The rental on fishing tools ranges from $5.00 per day up to as high as $150 per day, depending upon the tool, its cost and



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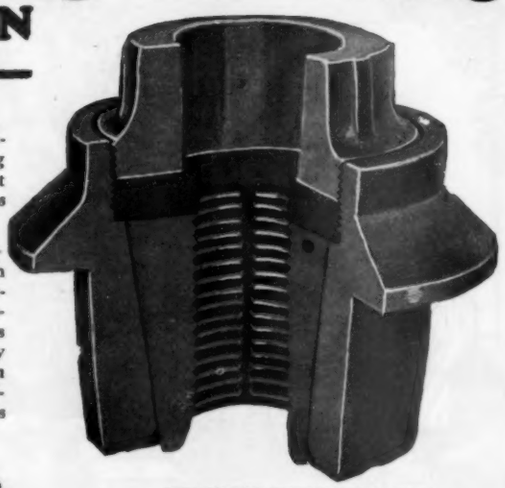
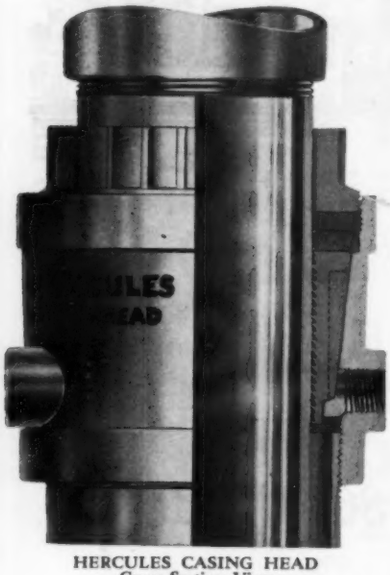
PROTECT your tubing and casing against dropping while suspended in the well. That is what these two production tools will do for you.

The Hercules Tubing Hanger supports the tubing at casing head with slips, has adjustable packing features and will hold a working pressure up to 2500 lbs. The body is made of forged steel and will carry a hanging weight of better than a hundred tons. This tool is especially adaptable where air or gas is used to flow the wells.



HERCULES TUBING HANGER
Cross Section View
(Patent Pending)



HERCULES CASING HEAD
Cross Section View
(Patent Pending)

Has been adopted as standard equipment by several of the major oil companies.

The Hercules Casing Head carries the inside string of casing on slips and has a simple but effective means of packing off fluid or gases between two strings of casing.

Slips can be supplied for any size tubing to be used with the Hercules Casing Heads making it an ideal flow-head for air or gas lift.

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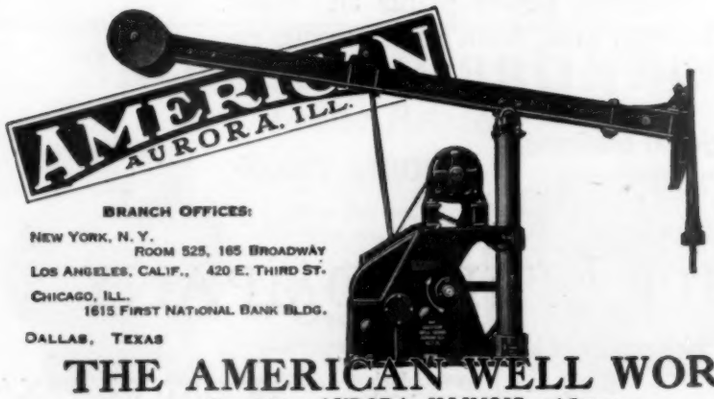

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its value in fishing. For instance, a trip spear may rent for $5.00 per day, plus the cost of repair, if any, necessary to restore it to condition after being returned, while the jars for rotary fishing, which require the services of an experienced operator of the tool, who accompanies the tool and directs its operation, rent for as high as $150.00 per day.

In the event a fishing tool is lost in the hole, however, the loser pays for the tool.

But, in fishing, the time required almost always exceeds the value of a fishing tool—even one day's time, and it is not the cost of a fishing tool that sets up fishing expense, as much as the cost of operating the rig to do the fishing.

Hence, a fishing tool service, maintaining a full set of tools in stock at all times, that may be withdrawn immediately on a rental basis and run into a hole, sets up the advantage that the exact special tool required is available, which is the better part of the fishing job. While the rental cost of fishing tools may seem high, it must be remembered that the tool may set on the rack for a year before it is required, and that the cost of keeping the tools ready, is also a part of rental expense, which is much less than if the drilling contractor had maintained the tool himself and hauled it around with the rig. There is much to be said in favor of organized fishing tool service.

Shop drawings of tools used for fishing are required for making the same, and since a tool may be needed quickly, a hasty drawing may lead to error and delay, or perhaps more trouble. To forestall this, the writer once made up a fishing bible, containing working drawings of something over 100 fishing tools for standard and rotary work, for use in the field. That this method proved of value is indicated by the fact that a copy was furnished to shop superintendent at first, when further copies were requested by field superintendent, then by drilling foremen, and eventually each driller had a copy with his log book.

This article does not contain working drawings, but the same may be made up, and any organization with even one drilling rig, should have a fishing tool index of the kind described, not only for selecting the proper kind of tool, for the memory fails sometimes when trying to think of a tool, but also for handing the same to a shop foreman from which a tool may be made, or a tool may be modified.

Such things as tapers, not too great, nor too little, have been worked out to detail of correctness; slips for many tools may be interchangeable; bowls and sockets may be made to fit any tool requiring the same, if the threads on bowls and tools are made the same; patented tools may be modified as to threads to fit with other accessory tools, which comes under the head of standardization and, since standardization has proven of benefit in some cases, and will eventually prove so in all, fishing tools may be standardized with profit, even if the standards extend no further than a single set on a single rig.

(To be continued)

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Louisiana--Arkansas Field Notes

Mount Holly Gets First Failure and Another Producer

SHREVEPORT, La.—The "on again, off again" behavior of two extension wells on the extreme southeast part of Champagnolle, that the previous week extended production, addition of Mount Holly's first official failure and its second producer, and the purchase by the Standard Oil Company of 1200 acres of leases including a wildcat test in Caddo Parish, that showed much oil in a drill stem test, were the features last week.

Ohio Oil Company's Sam Oliver 1 in SW SW of Section 7-17-13, completed week before last, extending the Champagnolle producing area a quarter of a mile south and east, has gone dead and been revived three times since its completion. The well which was completed in six feet of sand at 3048 feet, came in making clean oil at first, salt water soon appearing as about half of the yield. The well after flowing through a 1½-inch choke for two days went dead but was revived. A gauge on April 24 showed that for the preceding 20 hours it had made 1166 barrels of net oil, representing 20 per cent. of the total fluid yield. The following day, the net oil was 1860 barrels with the salt water remaining at 80 per cent. of the total. During the day the well again went dead but was swabbed back the following day, but flowed only a few minutes. At present it is being swabbed again.

Similar behavior was displayed by B. H. Raulston 1 in SE SE Section 12-17-14, a quarter of a mile west of the Oliver well and a quarter of a mile south of Ohio Oil Company's W. N. Raulston 1, Section 12-17-14, which opened up an entirely new producing section of Champagnolle to the southeast. The B. H. Raulston was completed at 3017 feet, flowing 1230 barrels of net oil through a 1½-inch choke, 50 per cent. salt water. The yield rapidly fell away and on April 24 the well was making only 63 barrels of oil. On April 25 2½-inch tubing was run in an effort to revive the well but without avail and the following day, tubing with packer was re-set in the hole.

W. N. Raulston 1 is averaging about 1200 barrels daily of net oil, the gauges for last Wednesday, Thursday and Friday showing daily net oil yield as follows: 1114 barrels; 1212 barrels, and 1179 barrels, the salt water being about half the total yield.

Despite the showing of the two latest wells in the southeast extension, Ohio Oil Company during the last week announced two new tests for that area. Both tests are for Section 12-17-14, L. S. Adams 2 being located in NE NE of the section where derrick is being built, and E. Raulston 1 being located in SW SE of the section, derrick pattern having been made. Incidentally, these were the only two new locations announced during the week for Arkansas, although five workovers for Smackover field, all in Union County, and one in the older pool of Champagnolle. All of the workovers in Smackover call for perforations at the Nacatosh sand around 1900-2000 feet.

The Ohio Oil Company is now drilling at 1363 feet in its latest test to be spudded in in the southeast part of Champagnolle. This is Lynn 1 in Section 7-17-13.

Another development of the southeast part of Champagnolle during the week was Atlantic Oil Producing Company's Sample 1 in Section 7-17-13, 1120 feet west and 330 feet west of the center of the section, which, after being completed several months ago as a 35 million foot gasser, at 3196 feet, now has started flowing oil at the rate of 300 barrels daily. Tubing and packer will be set in the hole.

Mount Holly

In the new Mount Holly district of Ouachita County, Arkansas, the first official failure was recorded during the week when Atlantic Oil Producing Company and E. M. Jones abandoned Allen A-1 in Section 25-15-18, as a dry hole at 3136 feet. No casing was set. Two drill stem tests, one from 2849 to 2859 feet, and other from 2860 to 2866 feet had shown salt water. This test was a half mile northeast of Charles McDonald's Wilson B-1, in the same section, the discovery well of the district.

McDonald Brothers' Wilson A-1 in Section 25-15-18, a quarter of a mile south of the discovery well, and in reality the first test drilled in the new field to show oil, was officially completed during the week as a 45-barrel pumper, 15 per cent. of the yield being salt water. The hole was deepened with tools from 2859 feet where it made oil by heads for several days. An eastern offset to the discovery well, Root Refineries' Wilson 1 in the same section, appears as it will be a small producer. With total depth of 2844 feet with three feet of sand and in an open hole, the well has been bailed to the bottom.

Charles McDonald's Wilson B-2, a northern offset to the Wilson B-1, is drilling at 2550 feet after testing salt water in a drill stem test from 2369 to 2374 feet.

In the same section Magnolia Petroleum Company is preparing for another drill stem test in C. M. & K. Wilson 1 from 2852 to 2859 feet after a core showed a broken sand showing oil. This well tested dry in a drill stem test from 2750 to 2754 feet. After missing a core from 2830 to 2832 feet, a later core was made to 2836 feet and a Halliburton testing tool was run from 2795 to 2836 feet, eight joints of salt water and salty mud with a light show of oil being the result after allowing to set for 20 minutes. Another core was taken at 2847 feet which showed the formation to be in red beds, the broken sand core being made later.

Cumberland Petroleum Company is drilling at 1750 feet in Burton 1 in Section 24-15-18; Timberlake and Associates are drilling at 1920 feet in Wright 1 in Section 25-14-18, six miles north of the discovery well, and Flaucher and associates are shut down at 2475 feet in Bucks 1 in Section 7-15-17, 2½ miles northeast of the discovery well. George Kouri has done nothing further at his location for Henson 1 in Section 24-15-18 and L. L. McDonald's Crowley 1 in Section 27-15-18, is still a derrick pattern.

Standard Buys Wildcat

Standard Oil Company of Louisiana has bought from the D. C. R. Oil Company its Hunter Estate 1 in Section 17-19-14, nine miles north of Shreveport and approximately four miles southeast of nearest production, which showed 600 feet of 41 gravity oil

News From Rocky Mountain Fields

in a drill stem test. Six-inch casing was set at 2422 feet. Bailing was scheduled to start this week-end. Standard Oil Company of Louisiana also acquired 1,200 acres surrounding the well, for a consideration of $10,000 in cash, 40 per cent. of the production of 450 acres of the leases, and 60 per cent of the production on the other 750 acres. The company has completed a four-inch gathering line to the well, and it has been connected up with two 250-barrel tanks.

Five producers, three in Arkansas, and two in the Pine Island district of Caddo Parish, Louisiana, added 2,068 barrels initial yield during the week. The official gauge of Ohio Oil Company's Sam Oliver 1 in Section 7-17-13, which has been going dead and revived, was placed at 1,750 barrels, while the same company's B. H. Raulston 1 in Section 12-17-14, which has been behaving similarly was given 150 barrels of daily production. The last week also recorded nine gassers and four failures. Included in the failures were Carter Bell and associates' Terrell 1, a wildcat in Section 27-18-14, Union County, Arkansas, that was abandoned as a dry hole at 2594 feet, and Atlantic Oil Producing Company and E. M. Jones' Allen A-1 in Section 25-15-18, Quachita County, Mount Holly district, which was abandoned as a dry hole at 3136 feet. R. O. Roy's Sample 1, a wildcat in Section 1-13-14, DeSoto Parish, was also abandoned as a dry hole at 3102 feet. Seven of the week's gassers were in the Monroe gas field in Quachita, Morehouse and Union Parishes.

Eight new locations, two in Champagnolle and six in North Louisiana, including two wildcats, were announced during the week. The North Louisiana wildcats projected are Ruston Drilling Company's West Virginia Timber 1, 1980 feet north and 200 feet east of the southwest corner of Section 23-15-7e, Franklin Parish, and Triangle Drilling Company's J. H. Fullilove 1 660 feet south and east of the center of Section 11-17-12, Bossier Parish. Both tests are rigging up.

Vineland District

Vineland, Colorado.—Continental Oil Company has spudded in on a location 30 feet south of the discovery well in Vineland district, Pueblo County. The well will be drilled to 1200 feet.

Christy - Franz Syndicate's State-Lubers-Oliver 1 is deepening from 1120 feet and soon will attempt a shut-off of water encountered at 1040 feet. This syndicate has two other wells drilling.

Mountain Association to Meet in Canada

Great Falls, Mont.—Plans for the annual meeting of the Montana chapter of the Rocky Mountain Oil & Gas Association which is to be held this year in Calgary, Alberta, are going forward under the direction of E. B. (Hardrock) Coolidge and Walter F. Brittain for this association. This promises to be one of the most brilliant conventions the chapter has ever held, Calgary offering, as it does, special inducements in the way of convention refreshments. The meeting will be held some time in September, and the whole oil industry personnel has been invited to attend.

Billy Creek

Casper, Wyo.—Apparently it will not be long before the value of the Carter Oil Company's oil discovery in the Billy Creek gas field, central Johnson County, will be known. The company has succeeded in cleaning out its test and has plugged the bottom, 3240 feet, with cement. This well has been a freak in the history of Wyoming oilfield operations; it has continued to fill up with heaving sand whenever the pressure of the oil column was removed. The hole has been standing with 1800 feet of oil since the bottom was reached. An attempt will now be made to drill through the cement and produce the well at its present depth; this failing, the well will be deepened.

Surrender Permits

Casper, Wyo.—Officials of the Producers & Refiners Corporation were in Casper recently arranging to surrender a number of oil and gas prospectors' permits, and arranging to start immediate drilling operations to validate those the company wished to maintain. Two wells will be started at once on the Frannie structure, northern Park County, two more in the Oregon Basin field, two on the Muskrat structure where the company has a large gas well shut in, and two or three wildcats.

Pennsylvanian Oil Show in New Mexico

Denver, Colo.—The first discovery in the Pennsylvanian sands in New Mexico appears to have been proved by the Continental Oil Company which has a very good showing of oil coming through some water in its No. 17 Rattlesnake, which is now bottomed at 6771 feet. The company is underreaming 4¾-inch casing to shut off the water encountered at 6730-6735 feet. The oil is 38 gravity and is apparently good for about 1000 to 1500 barrels per day.

Boundary Butte

Salt Lake City, Utah.—Report from the Continental Oil Company's well on Boundary Butte structure, southeastern Utah, is that the operator is drilling at 4833 feet in gray lime. This well recently encountered a flow of wet gas estimated at more than five million cubic feet which was cased off. The test is intended for the Pennsylvanian series, and is one of the most interesting wildcats being drilled in Utah.

Detroit Interests Drill in Montana

Casper, Wyo.—One of the newest attempts to discover a new field in Wyoming is to be launched this spring in Weston County, where the LeFaivre Oil Syndicate has made location on Martin Dome in what has been considered generally tertiary area. No previous drilling has been done in this territory, but in this same general region Gypsy Oil Company and Texas Production Company have surveyed with geophysical instruments. The well will be 45 to 50 miles west of the county seat, Newcastle, and the structure itself is thought to lie partly in Weston and partly in Campbell counties. Location is on se 29-45-68. Possible oil zones are the Foxhills sandstone, Frontier, Muddy, Kootenai (Sundance and Ellis Minnekahta, and Minnelusa) (Embar and Tensleep). Light oil is expected around 2500 feet and black oil around 4500 feet. The top of the Pierre to the top of the Dakota is estimated at 300 feet, and the top of the Madison at 5000 feet.

The LeFaivre syndicate is headed by Jerome LeFaivre and associates of Detroit.

New Refinery Testing

Great Falls, Mont.—The newly remodeled cracking plant on the Montana-Alberta border is being tested out by Maple Leaf Refining Company. This refinery has been an important factor in keeping oil prices in the Kevin-Sunburst field at a high level, due to its offer of premiums as high as 20 cents per barrel over the posted field price. Its products are marketed principally in Canada.

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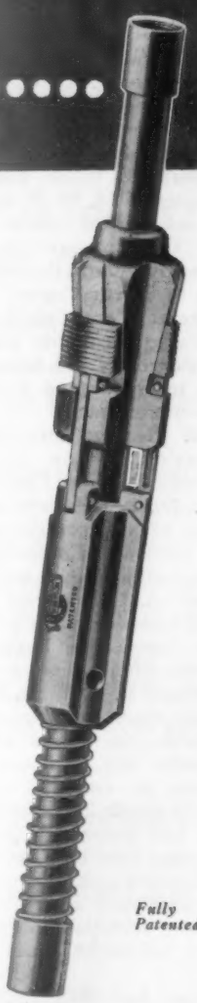

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Magnolia Gas Company Building Lines in Southwest Texas

DALLAS, Texas.—Expansion of the natural gas transportation and marketing activities of the Magnolia Gas Company, subsidiary of the Magnolia Petroleum Company, into the Southwest Texas district is being launched, with an initial construction program of several hundred miles of major size trunk lines. Materials have been purchased for immediate construction of a combination 18 and 20-inch welded line from Mathis, San Patricio County, which is within a 30 mile radius of three prolific gas areas known as the Refugio, White Point and Agua Dulce fields to San Antonio, with a 25 mile 14-inch extension line from the latter city to New Braunfels, Comal County.

Magnolia Gas Company is one of the largest transporters of natural gas in Southwest, having constructed and put in operation trunk lines aggregating 528 miles of 14, 16, 18 and 20-inch pipe since its original system was started in 1924. The company is gathering, transporting and marketing natural gas from fields in North Central Louisiana and Northeast Texas via trunk lines extending to Beaumont and intermediate towns enroute, and from the above gas areas to Dallas and Fort Worth, with connections made to intermediate twons. Headquarters of the company are maintained on the fourth floor Magnolia building, Dallas, and Fred M. Lege, Jr., is president and actively in charge of all operations. W. M. Murphy, Bethany, Louisiana, is superintendent of pipe lines, and other officials include: A. L. Bradford, Bethany, Louisiana, superintendent of power plants; M. A. Abernathy, Bethany, Louisiana, superintendent of measurement department; and D. E. West, Dallas, superintendent stores and supplies.

Fourteen-inch lines will be built by Magnolia Gas Company from Mathis terminal to connect the Mathis-San Antonio trunk line with field gathering lines, and present plans are to have two main line stations. The Mathis-San Antonio unit will require about 60 miles of 20-inch and 30 miles of 18-inch pipe, and facilities will be provided to handle 125,000,000 cubic feet of gas daily.

Survey has been completed on the route of the lines, and right-of-way buyers are winding up their work, while pipe is scheduled to begin arriving about May 12. The completion date for the above project has been set for September 1, 1929.

Smithwelded line pipe, which is manufactured at the Milwaukee mills of the A. O. Smith Corporation, will be used in the trunk lines, and the former concern has also contracted to electric weld the pipe, using four gangs at the start. Separate contracts will be made for ditching, doping of the pipe, and backfilling.

Use of Gas in California Showing Big Gain

Los Angeles.—If the present rate of consumption of natural gas is continued until the end of the year, 1929 will show a large gain over last year and will break all previous records. Domestic use of gas is steadily increasing and consumption by industrial firms has also shown an increase. The use of gas in oil field operations is showing a tremendous gain.

Gas Plays Important Part in Cities Service

New York, N. Y.—In a report setting forth the fact that 1928 was the most successful year in the history of the Cities Service Company, the important part played by natural gas in the company's activities is cited. During the year, the organization marketed over 93,000,000,000 cubic feet of both natural and manufactured gas. Several outstanding achievements marked the expansion of Cities Service natural gas activities. Natural gas was turned into the manufactured gas systems of Denver and Pueblo, Colorado, from a new pipe line tapping the Texas Panhandle gas fields. The company acquired during the year control of the Arkansas Natural Gas Company and the natural gas properties of the Southwestern Gas and Electric Company. These properties cover a wide territory, ranging from Shreveport, Louisiana, on the south, to Little Rock on the north. A natural gas pipe line also was completed from the Texas Panhandle to Kansas City, Missouri, making the third pipe line serving the organization's distributing system in that city and assuring this growng market an ample supply of natural gas for the future.

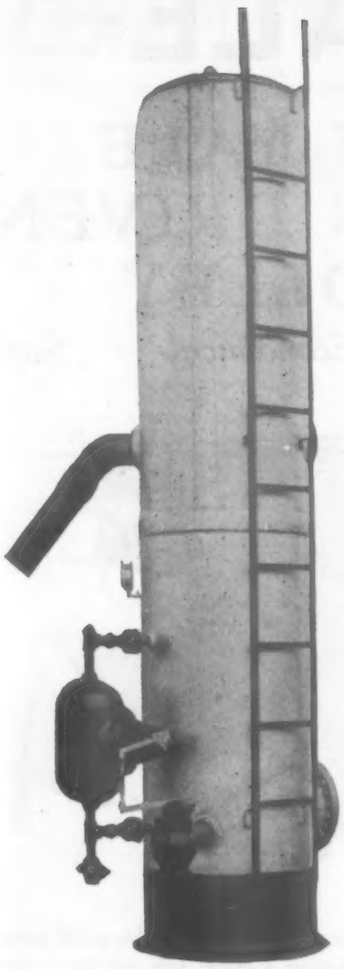
In its annual report of all operations for the year 1928, Cities Service Company showed an unprecedented expansion in all major divisions of the company's activities. Consolidated net earnings of the company and its subsidiaries were $64,048,047, an increase of $3,930,055 over net earnings in 1927. Gross earnings were $167,255,672 as compared with $158,028,257 for the preceding year. Total assets of the company on December 31, 1928, amounted to $913,592,354. Oil production was reduced to 19,921,350 barrels during 1928, in compliance with curtailment efforts of the industry. In 1927, the company's output of crude oil aggregated 28,300,731 barrels. Further expansion is planned for 1929.

Shreveport.—Arkansas Natural Gas Company and the Moody-Seagraves interests were expected to sign a contract in New York on May 1 for construction of a 20-inch gas line from Alto, Richland Parish, Louisiana, to Waskom, Texas, where the latter is interested through one of its subsidiaries in a compressor station and absorption plant.

Moody-Seagraves officials in Shreveport refused to make a formal announcement of intentions on April 30.

C. E. CRADDOCK

who has been named a vice-president and division manager of Mack International Motor Truck Corporation. Mr. Craddock will continue to make his headquarters in Dallas, Texas, where he was district manager prior to his advancement. Embracing the Texas and Oklahoma territories, the division now under the direct supervision of Mr. Craddock has reported through the Chicago offices of the Mack organization but with this change direct contact is established with the New York general offices. Prior to his removal to Dallas, Mr. Craddock was located in Tulsa and enjoys a wide acquaintance throughout the oil industry.



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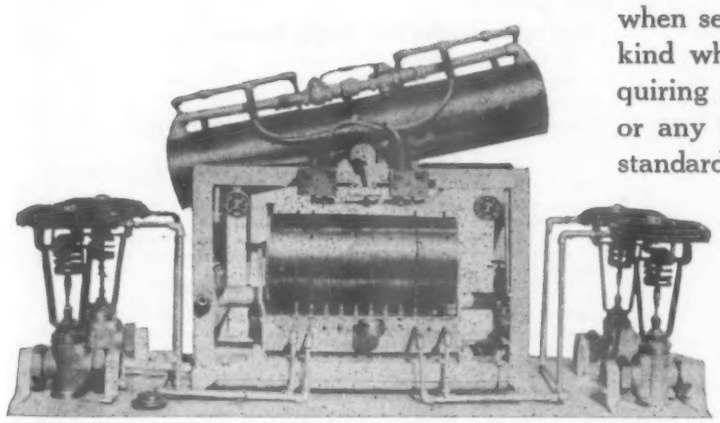

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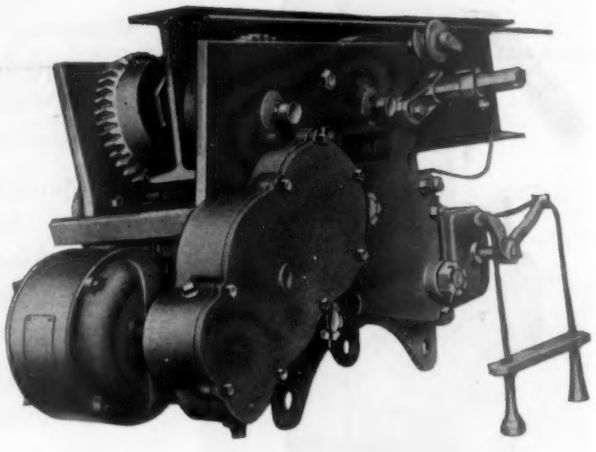

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COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
COTTON COUNTY—		
Everetts Oil Co., Hall 1, se nw, 36-4s-13w	*	2501
Shasta Oil Co., Indian 1, ne, 34-1s-11w	*	2606
CREEK COUNTY—		
Carter, Durant 2, nw ne ne, 18-16-9e.	170	3035
Flynn & Morgan, Clark 1, nw ne sw, 17-14-8e	*	4050
Paraffine Oil Co. & Reliance Oil Co., Cumsey 1, ne sw sw, 16-16-12e...	*	2772
Thompson & Black, Wilson 2, nw sw,		
C. A. Cole et al, Hull 1, nw se se, 32-18-11e	*	1940
GRANT COUNTY—		
R. A. Gibson, Gibson 1, cn½ sw, 7-28-1e	*	2250
HUGHES COUNTY—		
Sunray, Nitchey 2, se nw ne, 19-5-8e	1200	2525
Independent, Yahola 1, se sw ne, 6-8-9e	¶68	3429
KAY COUNTY—		
Harris & Haun, School Land 1, e n½ ne, 36-28-1w	¶150,000 ft	952
C. A. Leonard et al, Smith 2, sw ne, 28-27-1e	¶¼	890
Marland, Shimp 1, c ne ne, 18-29-1e	*	3541
KIOWA COUNTY—		
Stahl & Burris, Ditmar 1, nw se se, 18-6n-16w	8	448
S. B. Cloys, Brazil 1, nw ne, 33-7n-17w	*	1026
McCLAIN COUNTY—		
Mid Continent, James 1, se, 22-5n-3e	*	3492
MUSKOGEE COUNTY—		
H. E. Williams, Monday 1a, cnl se ne, 17-15-17e	*	1450
OKFUSKEE COUNTY—		
W. L. Umburn & Atlantic Oil Prod. Co., Tiger 7 (twin) csl se nw, 2-10-11e	20	1718
Prairie, Miracle 1, ne se sw, 29-12-10e	800	3322
Barnsdall, Barnett 1, se ne se, 24-11-10e	*	2472
OKMULGEE COUNTY—		
Kirkland & Son, Prince 1a, ne nw nw, 20-15-13e	12	1554
OSAGE COUNTY—		
Kewanee Oil & Gas Co., No. 9, ne nw se, 34-27-6e	10	2829
W. C. Elliott No. 1, se ne se, 33-22-11e	40	2098
Tidal, No. 1, sw se, 24-24-8e	10	2829
Harry McGill, No. 1, sw se, 8-22-8e	*	3128
Nath Jones et al, No. 1, sw se, 28-23-9e	*	482
Peters Pet. Co. No. 2, nw sw, 28-24-9e	*	2400
Carter, No. 2, sw nw sw, 34-26-6e..	*	3052
Carter, No. 3, se ne se, 33-26-6e....	*	3065
Carter, No. 1, se ne, 33-26-6e.....	*	3221
PAYNE COUNTY—		
Prairie, T. B. Slick & Shell, Anderson 1, ne nw, 3-17-6e	*	4191
PONTOTOC COUNTY—		
Wilcox Oil & Gas Co., Haney 1, nw se nw, 23-4n-7e	*	1840
POTTAWATOMIE COUNTY—		
Gypsy, Miller 6, sw ne se, 18-8-5e..	47	4045
Amerada & Barnsdall, Wallace 3, se sw sw, 17-8-5e	405	4120
Wilcox, Smith 3, ne nw se, 8-8-5e..	700	4027
Magnolia, Nicholas 2, ne nw, 31-7-5e	12	4413
Magnolia, Pugh 1, sw se se, 7-7-5e	85	4218
Blackwell O& GCo., Cherry 2, ne nw ne, 25-7-4e	225	4170
SEMINOLE COUNTY—		
Sinclair, Thompson 1, ne sw, 18-9-7e	1565	4261
Carter, Aleck 1, c sw se, 23-7-6e...	¶17	3117
Amerada, Fehlig 2, se sw ne, 7-8-5e	140	4331
Skelly & Atlantic, Lottie 4, nw, 6-9-6e	660	4325
Burk Gries Corp., Mayes 2, sw ne ne, 1-9-5e	460	4581

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Prod. This Week	Initial Prod. Last Week
Arkansas	8	3	4	1	..	2	4	..	1,976	660
California	30	20	29	18	..	..	1	2	68,010	23,275
Illinois	..	4	..	1	..	..	..	3	...	4
Indiana	1	1	..	1	..	..	1	..	...	5
Kansas	..	49	..	29	..	3	..	17	...	16,790
Kentucky	24	16	20	9	..	2	4	5	635	506
Louisiana	17	14	6	3	8	4	3	7	375	105
Michigan	6	13	4	10	..	1	2	2	2,150	2,675
Mississippi	..	9	..	..	..	..	..	9	...	...
New York	..	12	..	11	..	1	..	..	...	24
Ohio	43	49	16	18	16	16	11	15	597	660
Oklahoma	50	59	22	28	4	4	24	27	6,984	8,221
Pennsylvania	26	68	22	57	4	7	..	4	65	207
Tennessee	..	3	..	2	..	..	..	1	...	60
Texas	113	124	49	71	13	8	51	45	25,303	58,122
West Virginia	18	9	3	2	14	6	1	1	53	50
Total	336	344	175	194	59	46	102	104	106,148	53,411
Increase this week	..	..	..	..	13	..	..	..	52,737	...
Decrease this week	8	..	19	..	..	..	2	..	...	...

Company, Well and Location	Initial Production Bbls.	Depth
Magnolia, Reed 3, sw nw, 17-5-8e..	290	2615
Prairie & Slick, Chisholm 1, sw nw, 22-10-7e	*	3710
STEPHENS COUNTY—		
Magnolia, Kagay 21, nw se se sw, 34-1s-8w	65	1645
Clark & Cowden, Davidson 3, nw sw sw, 13-1s-4w	60	2986
Magnolia, Thomas 7, nw sw se se, 25-1n-9w	*	2285
Fossett et al, Adams 3, sw nw nw sw, 19-1s-8w	*	1531
WAGONER COUNTY—		
Chicago Drlg. Syndicate, Barnes 2, cel nw ne, 13-16-17e	*	438

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
FRUITVALE—		
Western Gulf Oil Corp., KCL-C1..	600	4007
ELWOOD—		
Barnsdall Oil Co., Doty 4	4000	3750
HUNTINGTON BEACH—		
Standard Oil Co., Thompson 5	110	3610
LONG BEACH—		
R. R. Bush, Barnes 2	2000	7155
Richfield Oil Co., Bernstein 4	3300	7335
Butler 1	800	7100
Roggie and Simmel Oil Co. No. 5...	150	7235
Shell Oil Co., Pickler 11	200	6728
Woolner Oil Co., Osborne 3	2150	7265
MT. POSO—		
Superior Oil Co., Glide 11	200	1717
ROUND MOUNTAIN—		
Shell Oil Co., Jewett 5	350	1810
SANTA FE SPRINGS—		
Associated Oil Co., Green 3	7500	6915
General Pet. Corp., S. F. 152E	1100	5400
Anderson 153-D	1400	5910
S. F. Comm. 186-E	500	5565
S. F. 179-E	900	5055
S. F. Comm. 179-D	950	5347
O. J. Rohde, York 2	2500	7407
Shell Oil Co., G. H. N. 19	700	5943
The Texas Co., Baldwin 4	6000	6840
Matern 2-8	2500	6470
Union Oil Co., Farwell 11	2600	5865
Union Oil Co., Howard 10	6000	6565
Universal Consolidated Oil Co., Blanchard 10	5600	6350
Wilshire Annex Oil Co., Koontz 3	9000	6860
SEAL BEACH—		
Marland Oil Co., McGrath-Selover 6	1600	6420
Standard Oil Co., San Gabriel 6	1300	5120
VENTURA—		
Associated Oil Co., Lloyd 46	1600	6220
Lloyd 71	3000	7347

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production BBls.	Depth
BRADFORD FIELD—		
Hazlewood Oil Co., Lot 23, tract 04	pressure	....
Esther Oil Co., Lawton 72	pressure	....
W. T. Piper & Co., Piper 10	2	....
James W. Looker, Kennedy 4	5	....
W. J. Healey, Healey 14	3	....
L. G. Schenfield, Schenfield 40	3	....
Schenfield 41	pressure	....
Loop & Bell, Huffman 1	2	....
Hope Oil Co., Hope 1	4	....
W. J. Fredericks, Erb 2	3	....
W. E. Burdick, Potter 3	3	....
C. W. Moore, Moore 1	3	....
D. J. Moody, Moody 27	3	....
A. L. and M. L. Lilly, Southard 35..	2	....
M. E. Barry, & Co., Barry 1	2	....
Curtis & Co., Burns 1	4	....
Messer Oil Co., Messer 2	pressure	....
J. W. Kaufman, Rounds 28	pressure	....
N. V. V. Franchot, Rounds 8	pressure	....
W. B. Miller, Borden 1	3	....
T. B. Wilson, Borden 2	3	....
Minnich Est., Kenyon 7	pressure	....
Sloan & Zook Prod. Co., Fee 20	4	....
D. W. Daly, Bingham 369, tr 72	2	....
Penn Brook Oil Co., Franchot 2	2	....
D. & P. Oil Co., Franchot 1	3	....
E. M. Daly, Daly 3	2	....
Devore & Potter, Russell 4	2	....
ALLEGHENY COUNTY—		
Harbison & Co., Eckart 1	¶1½	....
Butchers Oil Co., Yunkers 1	5	....
CLARION COUNTY—		
Peoples Nat. Gas Co., Irwin 1	¶1	....
Berry-Bond Gas Co., Bennett Heirs 1	¶2	....
GREENE COUNTY—		
Nat. Gas Co. of W. Va., Johnson 1..	¶2	....

NORTHWESTERN OHIO

Company, Well and Location	Initial Production BBls.	Depth
WOOD COUNTY—		
Glass & Schregongest, Brandeberry 1	50	1340
Lantz & Co., Avesberger 1	5	1322
HANCOCK COUNTY—		
R. T. Rittenhouse, Freed 7	25	1389
ALLEN COUNTY—		
J. W. Davis, Roberts 1	*	1320

INDIANA

Company, Well and Location	Initial Production BBls.	Depth
GREEN COUNTY—		
Fletcher, Mosier & Co., Rose 1	*	2191

MICHIGAN

Company, Well and Location	Initial Production BBls.	Depth
MUSKEGON COUNTY—		
Puritan-Majestic Oil Co., DeGraff 1.	1200	2035
Nelson & Witt, Fenner 1	500	2063
Nat. Gas & Oil Co., Lewis 1	250	....
Concord O. & G. Co., Beegle 1	200	2065
MIDLAND COUNTY—		
Pure Oil Co., Consumers Power Co. 1	*	3597
Shirts 1	*	3580

WEST VIRGINIA

Company, Well and Location	Initial Production BBls.	Depth
CALHOUN COUNTY—		
Dailey O. & G. Co., Maze 1	¶½	....
Hope Nat. Gas Co., Smith 7237	¶1¼	....
Godfrey L. Cabot, Cabot 1	¶¼	....
W. H. Bickel, Betts 1	¶1½	....
Bell Hrs. 6	¶½	....
LINCOLN COUNTY—		
United Fuel Gas Co., Horse Creek Land, 2557	¶1	....
Horse Creek Land 2517	¶½	....
Earl Cameron, Stone 3	¶½	....
BOONE COUNTY—		
Earl Cameron, W. L. Stone 1	¶1½	....
Owens Bottle Machine Co., Nelson 1	¶¼	....
Ballard 1	¶¼	....
GILMER COUNTY—		
South Penn Oil Co., Ellis 4	40	....
McCall & Co., Moore 3	¶1¼	....
MINGO COUNTY—		
F. H. Yates, Workman & Cowden 1	8	....
Phelps 1	¶2½	....
JACKSON COUNTY—		
Heck Oil Co., Brown 4	5	....
PUTNAM COUNTY—		
Sovereign Gas Co., Switzer Heirs 2	¶1¼	....
RITCHIE COUNTY—		
Imperial O. & G. Products Co., Bayne 1	*	....

KENTUCKY

Company, Well and Location	Initial Production BBls.	Depth
OHIO COUNTY—		
James C. Ellis & Co., Daniels 13	10	....
Daniels 14	5	....
New Domain O&G Co., Royal 7	30	....
Carpenter & Co., Howard 1	50	....
Wheeler & Botts, Crow 2	5	....
Ohio Oil Co., Taylor 2	5	785
J. E. Hare, Ralph 1	5	506
Cumberland Pet. Co., Hamilton 17	5	....
Hamilton 18	5	....
Globe Oil Co., Gossett Roadway 2	5	....
DAVIESS COUNTY—		
Creek Drilling Co., Leet 5	120	....
Brown 3	14	....
Hamilton 1	*	2500
The Petroleum Co., Burns 12	90	....
Burns 13	45	....
Hansford 1	40	....
Cumberland Pet. Co., Salmon 1	70	....
Huff & Calderwood, Salmon 5	70	....
Wade & Moore, Baird 3	40	....
Smith, Randolph & Co., Wells 10	20	....
Whitmer O&G Co., Martin 1	*	....
WARREN COUNTY—		
Penn Homa Oil Co., Hobson Hrs. 19	1	973
ALLEN COUNTY—		
E. D. Depenbaugh, Beam 1	*	....
HANCOCK COUNTY—		
Albertson, Ramey & Co., Lyons 1	*	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production BBls.	Depth
MONROE COUNTY—		
Ohio Fuel Gas Co., Stallings 1	¶¼	1698
Lucas & Thornberry, McElfresh 1	¶½	1933
Stephens Bros., Stephens 5	¶¼	1558
F. H. Ward, Ward 3	*	....
MORGAN COUNTY—		
Hopewll Oil & Gas Co., Rharp 1	80	3600
McBride & Co., Mills 2	¶½	....
The Kemrow Co., Riggleman 2	*	830
WASHINGTON COUNTY—		
Preston Oil Co., Welsh 3	*	1891
Ohio Fuel Gas Co., Schlarb 1	*	1866
Bateman Oil Co., Bateman 1	*	4021
NOBLE COUNTY—		
Local Oil Co., Robbins-Moore 1	*	422

CENTRAL OHIO

Company, Well and Location	Initial Production BBls.	Depth
PERRY COUNTY—		
R. T. Wehrle & Co., Cunningham 2	10	3186
Chartiers O&G Co., Hocking Products 211	40	3422
Leonard O&G Co., Driggs 3	27	3764
William Kline & Co., Griswold 4	20	3793
Preston Oil Co., Crist 3	45	2735
Ohio Fuel Gas Co., May-Watts 1	¶¼	3497
ATHENS COUNTY—		
Ohio Fuel Gas Co., Brooks 1	¶2½	1537
Glass 4	¶¼	1467
Swartz 2	*	1675
Winters 1	¶½	1014
Kiggins & Co., Jones 4	¶¼	1536
ASHLAND COUNTY—		
Robinson & Co., Devinney 2	¶½-200	....
Robinson & Co., Smalley 2	5	....
O. W. Zink & Co., Chesrown 1	¶¼	....
JACKSON COUNTY—		
Ohio Fuel Gas Co., Washburn 1	¶1¼	2701
Jenkins 1	¶1	2678
Rice 1	¶¼	2711
MUSKINGUM COUNTY—		
Hope Construction & Ref. Co., Butler 4	10	....
Mid-East Oil Co., Knight 2	5	4005
LORAIN COUNTY—		
Ohio Fuel Gas Co., Tran 1	*	....
Chemical O&G Co., April 2	*	....
COSHOCTON COUNTY—		
Logan Gas Co., Shiebe 1	36	....
MEDINA COUNTY—		
Ohio Fuel Gas Co., Peters 1	22	....
HOCKING COUNTY—		
Preston Oil Co., Reinscheld 2	17	2859
WAYNE COUNTY—		
Ohio Fuel Gas Co., Myers 1	¶½	....
MEIGS COUNTY—		
W. H. Sipe & Co., Diehl 1	¶¼	568
GALLIA COUNTY—		
Halstead & Kennedy, Brothers 1	¶¼	1599
GUERNSEY COUNTY—		
Patton & Co., Marshall Heirs 1	*	....

ARKANSAS

Company, Well and Location	Initial Production BBls.	Depth
OUACHITA COUNTY (MT. HOLLY—		
McDonald Bros., Wilson 1, 25-15-18	38	2875
Atlantic O. P. Co. and E. M. Jones, Allen A-1, 25-15-18	*	3136
UNION COUNTY (CHAMPAGNOLLE)—		
Ohio Oil Co., Sam Oliver 1, 7-17-13	1750	3048
B. H. Raulston 1, 12-17-14	150	3017
UNION COUNTY (HILLSBORO)—		
Carter Bell et al, Terrell 1, 27-18-14	*	2594

NORTH LOUISIANA

Company, Well and Location	Initial Production BBls.	Depth
CADDO PARISH—		
W. D. Chew, Fee B-2, 33-21-15	¶50	907
Dixie Oil Co., Robertshaw 96, 13-21-15	90	1753
Simplex Oil Co., Baird 4, 22-20-15	40	2220
Nemours Corp., Ellerbe 1, 18-15-12	*	2528
DE SOTO PARISH—		
R. O. Roy, Sample 1, 1-13-14	*	3102
MOREHOUSE PARISH—		
Interstate Nat. Gas Co., Fleming 1, 15-20-4e	¶22½	2163
Southern Carbon Co., Tensas Delta 9, 2-20-4e	¶5	2180
OUACHITA PARISH—		
Southern Carbon Co., Fairbanks 12, 34-20-4e	¶8½	2158
Imperial O. & G. Prod. Co., Stubbs 7, 44-19-3e	¶4	2195
Pipes & Mack, McGee 2, 10-18-4e	¶3	2213
United Carbon Co., Spade 2, 36-19-3e	¶5	2197
UNION PARISH—		
Feazel & Inabnet, J. A. Peak 1, 16-20-4e	¶17	2144

SOUTH LOUISIANA

Company, Well and Location	Initial Production BBls.	Depth
BLACK BAYOU—		
Shell, Watkins 9	30	981
HACKBERRY—		
Cameron Oil Co.,-Rycade Oil Corp., Kaough 1	50	3055
LOCKPORT—		
Vacuum-Gulf, Bordages 6, dd	90	3805
VINTON—		
Vinton Pet. Co., Matilda Gray 2	75	2925

TEXAS

TEXAS GULF COAST

Company, Well and Location	Initial Production BBls.	Depth
BARBERS HILL—		
Humphreys Corp., Kirby B-6	*	5809
BIG CREEK—		
Gulf, T. W. Davis 18, dd	30	3690
BLUE RIDGE—		
Gulf, Invincible Oil Co. 7	1100	4250
Humphreys Corp., West-Schenck 5	*	4180
Navarro Oil Co., Robinson B-6	1550	4265
Sheffield, Telshaw & Caddy, Blakely 2	*	2715
BOLING—		
Boling Dome Oil Corp., Armstrong 1	*	5200
South Texas Pet. Co., Foytek 1	*	4080
HULL—		
Gulf, Phoenix Dev. Co. 42, dd	200	3020
Phoenix Dev. Co. 88, dd	250	2440
HUMBLE—		
The Texas Co., Stevenson 39	10,043	5248
PIERCE JUNCTION—		
Anderson & Plummer, Whitehead 5	1200	4775
RACCOON BEND—		
Humble, Dietrich 2	880	3317
REFUGIO—		
Houston Gulf Gas Co., Rose Lambert 2	¶75	3646
Oigufer Oil Co., Shelly-Ryals 1	250	3683
SUGARLAND—		
Humble, Brazos Farm 5	1200	3598
Nelson 2	1200	3672
SOUTH LIBERTY—		
Humble, Reviere B-4	5	2320
Fort Bend Oil Co., Blanche Reviere 2	50	1770

SOUTHWEST TEXAS

Company, Well and Location	Initial Production BBls.	Depth
COLE FIELD—		
Houston Oil Co., J. Dinn 1	¶40	1780
O. W. Killam, Bruni 4	¶35	2303
Wm. F. Morgan, King-Harper 3	*	1760
JIM HOGG COUNTY—		
A. L. Kitselman, Lopez 1, Henne-Winch-Farriss pool	50	1967
Alworth-Stevens-Hild Co., Garza 16, Alworth pool	*	1100
DUVAL COUNTY—		
Humble, Kohler 18	¶25	2835
Kohler 21	¶25	1854
Schoolfield & O'Byrne, Bowe 3, Schoolfield-O'Byrne pool	25	2323

EAST TEXAS

Company, Well and Location	Initial Production BBls.	Depth
PANOLA COUNTY—		
Nat. Gas Prod. Co., Floyd 3, B. C. Jordan sur	¶5	956

TEXAS PANHANDLE

Company, Well and Location	Initial Production BBls.	Depth
CARSON COUNTY—		
Gulf Prod. Co., E. Cooper 1	350	3140
CHILDRESS COUNTY—		
The Texas Co., C. L. Smith 1	*	4571
GRAY COUNTY—		
Magnolia Pet. Co., Gethings 1	¶2½	3075
Nelson Holding Co., W. P. Dial 1	*	3165
Southern Pet. Explo. Co., McConnell 4	1400	3212
The Texas Co., G. H. Saunders 10	385	2656
HUTCHINSON COUNTY—		
Antelope Creek Oil Co., Sanford 3	10	3095
MOORE COUNTY—		
Devonian Oil Co., Sneed 1-A	*	3455
Dixon Creek Oil Co., Sneed 4-A	¶9	3356
Skelly Oil Co., Armstrong-Byrd 6	325	3173
WHEELER COUNTY—		
Arnold et al, Richey 1	¶8½	2270
Holmes et al, I. Close 1	¶60	1375
Upham Gas Co., G. W. Raybo 1	¶24	1976
Henry Vaughan et al, Woodley 1 dd,	*	2400

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production BBls.	Depth
BROWN COUNTY—		
American-Maracaibo Co., Cross 4	*	1087
C. O. Moore et al, Cross 1	200	1156
Prairie O&G Co., Shults 1	20	1101
Williamson et al, Eddington 5	*	1175
COLEMAN COUNTY—		
Roth & Faurot, Sealy-Smith 1	*	3205
Stepp & Kiester, Shore 1	*	2315
EASTLAND COUNTY—		
Southern Oil & Prod. Co., Thorp 2	¶2¾	1730
McCULLOCH COUNTY—		
Hartshell et al, Steelhammer 1	*	610
SHACKELFORD COUNTY—		
Geo. Callahan et al, Nail 1 (Sec. 151)	*	1525
Roeser-Pendleton, Inc., Cook 1-A (Sec. 113)	*	1570
STEPHENS COUNTY—		
Hanlon Gasoline Co., Stephenson 2	20	4368
Nunn & Rumbaugh, Russell 1	20	2117

NORTH TEXAS

Company, Well and Location	Initial Production BBls.	Depth
ARCHER COUNTY—		
C. U. Beasley et al, Abercrombie-Taylor 3	25	1390
E. B. Christie et al, Campbell 1	*	1351
Estacado Oil Co., Prideaux 1	15	672
Freeman & Grebin, Easterling 1	20	1442
Gulf Prod. Co., H. L. Ward 3-C	*	1085
P. F. Gwynn et al, Thompson 1	100	1586
Harry Hines et al, Wallace 2	30	1780
Johnson & Fraser, Wallace 1	*	1791
D. O. Johnson et al, Wilson 7-A	65	1568
P. J. Lea & Daniels, Williams 7	20	593
Prairie O&G Co., Richardson 1, Lot No. 13	40	1168
The Texas Co. et al, American Properties Fee 1	*	1912

Company, Well and Location	Initial Production BBls.	Depth
COOKE COUNTY—		
W. J. Green et al, Moon-Touchton 1	*	2023
Lanfair et al, Jones 1	*	1860
Pure Oil Co., Embry 6	120	1365
The Texas Co., A. J. Dennis 1	*	1703
H. L. Dennis 8	145	1273
ELECTRA—		
Panhandle Ref. Co., Burnett 2-A	45	1407
Venmex Oil Co., Waggoner 15	15	877
JACK COUNTY—		
Panhandle Ref. Co., Smith 2	80	3050
Petroleum Prod. & Bridwell Oil Co., Sampley 1	85	3368
K-M-A AND IOWA PARK—		
Comac Oil Co. & Prairie, Bishop 7	*	901
Magnolia Pet. Co., J. W. Donohoo 13	*	1548
E. J. Stump & Heydrick, Ferguson 1	275	1791
MONTAGUE COUNTY—		
Continental & Bridwell Oil Co., Louderback 1	*	1959
WILBARGER COUNTY—		
Burton et al, Waggoner 1-G	125	2428
Carter et al, Waggoner 1	90	1993
Golding-Cochran et al, Waggoner 3-H	200	2446
E. B. Lawson et al, Waggoner 1-D	*	2493
Phillips Pet. Co., Waggoner 1, dd	70	2287
Waggoner 4-11	25	2393
Staley-Wynne & Co., Waggoner 5-F	320	2422
YOUNG COUNTY—		
Bratcher et al, Prideaux 3	5	498
Continental Oil Co. & Underwood, Campbell 2	*	927
May-Camp Drlg. Co., Prideaux 2	*	625
Paull Oil Co., Eddleman-Blount 1	*	3992
Riggs & Oliphant, Langston 2	*	623
Steed & Gaus, Snider 14	*	610
Sun Oil Co., Rogers 1	*	1063
Underwood Drlg. Co., Edwards 1	*	850
Wootten & Reed, Alexander 1	*	590
WEST TEXAS		
PECOS COUNTY—		
Gulf Prod. Co., Smith 16	900	1713
Mid-Kansas - Transcontinental, Yates 27-A	*	1575
WINKLER COUNTY—		
Atlantic Oil Prod. Co., Ida Hendrick 5	600	2925
Southern Crude & Dixie Oil Co., Hendrick 5-A-3-T-68	275	3060
Southern & R. A. Wesbrook, Hendrick 1-C-X-T-88	900	2825

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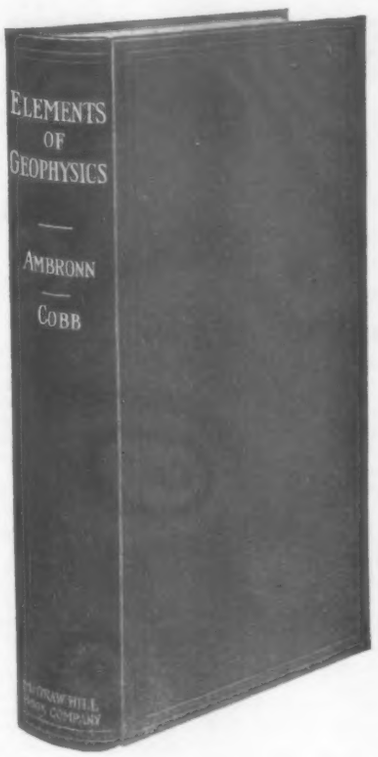

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PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending April 27	Previous week	Total this month	Total this year	This week Last Yr.	This month 1928	1928 year total
Arkansas	..	..	14	51	2	11	331
California	27	23	110	477	13	46	1,207
Louisiana	27	10	77	265	16	46	680
Kansas	..	16	53	283	22	68	1,032
Oklahoma	86	50	226	977	48	191	3,744
Texas	169	191	685	2,612	174	495	8,297
Total	309	290	1,065	4,665	275	857	15,291

OKLAHOMA

CARTER COUNTY—Gypsy, Morris 2, owdd, csl nw sw, 28-2s-3w.

COTTON COUNTY — Lawton Oil Corp., Sanders 2, se nw, 5-2s-10w, owdd; Silurian, Chambers 5, sw nw se nw, 2-2s-10w. Cooper & Badgett, Wilson 1, se nw, 15-2s-11w. Steve Linson, Lawler 1, nw ne nw, 14-2s-11w, owdd.

CREEK COUNTY—Kawfield Oil Co., Snelling 7, owdd, cel sw ne, 9-15-10e. Tom Slick Oil Co., Gress 1, nw se, 16-16-10e. Ed O'Rourke et al, Hunts 1, nw sw se, 16-16-10e. O. M. Irlan et al, Smith 1a, cel sw se, 21-17-10e. Magnolia, Dix 7, owdd, cel se se, 32-18-7e.

HUGHES COUNTY—Prairie & Slick, Deer 1, sw nw, 4-8-9e. Independent & Gypsy, Marshall 1, ne sw, 7-8-9e.

JEFFERSON COUNTY — Lesh & McCall, Moore 1, sw se ne ne, 13-2s-8w.

KIOWA COUNTY—E. M. Boring, Suhren 1, se nw se ne, 22-6n-16w. H. S. Christion, Stone 1, se, 18-7n-18w.

MUSKOGEE COUNTY—M. S. Mussellem, McCullough 1, sw, 34-14-19e. Decius & Garrett, Washington 1a, ne nw, 18-14-18e. Cook & Day, Fields 1, csl n½ n½ s½, 9-15-18e.

NOBLE COUNTY—Prairie & Slick, Waltermire 1, sw ne, 33-21-1w.

OKFUSKEE COUNTY—Prairie, Miracle 2, se sw, 29-12-10e. Tidal, No. 1, ne sw, 22-10-11e. W. L. Umburn, Hildebrandt 2, c ne se, 12-10-11e. W. L. Umburn, Simmer 8, se ne ne, 11-10-11e. C. L. McMahon & J. I. Carey, Sproleder 1, ne s wse, 29-12-10e.

OKLAHOMA COUNTY—Mid Kansas O. & G. & Ramsey, Trosper 1, ne nw, 19-12-1w.

OKMULGEE COUNTY—Chief Drilling Co., Smith 1, owdd, ne sw, 17-13-11e. Kirkland & Mid-Continent, Barnett 1, ne se se, 18-15-13e. J. E. Wallace, Colbert 6, nw sw ne, 14-14-14e. McClain & Miller, Stewart 1a, ne nw sw, 24-14-14e.

OSAGE COUNTY—Fields & Potts No. 3, sw ne nw, 30-23-12e. Devonian & Frank Billingslea No. 2, cel nw, 6-23-9e. I. T. I. O. No. 2, sw ne sw sw, 28-23-9e. Winona Oil Co. No. 2, nw sw sw, 27-24-10e (owdd. Carter No. 1, se sw nw, 34-26-6e. Oklahoma Nat. Gas Co. No. 788, ne, 15-21-10e.

POTTAWATOMIE COUNTY — Prarie, Rice 1, sw ne, 17-7-4e. Gypsy, Green 1, nw se, 17-7-4e. C. J. Wrightsman, Bledsoe 1, nw sw nw, 20-6-4e. Prairie & Slick, Laster 1, ne se ne, 19-6-4e. Simms Pet. Co. & C. J. Wrightsman, Alexander 1, se, 18-6-4e. Simms Pet. Co., Swift 1, sw, 17-6-4e. Magnolia & Pierce Hubanks 2, se nw, 17-7-4e.

PAWNEE COUNTY—Nadine Oil Co., No. 4, nw ne, 7-20-7e. McMann et al, No. 1, nw ne, 34-20-9e.

ROGER MILLS COUNTY—Bucy & Stone, Williams 1, c sw, 23-12-24w.

SEMINOLE COUNTY — Prairie, Patten 1, nw ne, 18-6-8e. Amerada, Hotulke 1, se sw se, 22-7-6e. Texas & Independent, Hotulke 3, sw se se, 22-7-6e. Prairie, Raitman 1, se nw, 18-9-6e. Carter, Factor 1, owdd, se nw, 26-7-6e. Sinclair, Cudjo "B" 5, twin, nw ne nw nw, 35-9-6e. Prairie, Billington, ne sw nw, 11-8-5e. Prairie, Billington 11, nw sw nw, 11-8-5e. Prairie, Holman 1, nw se ne, 26-7-6e. Prairie & Slick, Campbell 9, se nw ne, 6-9-6e. Prairie & Slick, Cudjo 3, ne nw nw, 26-7-6e. Prairie, Cudjo 4, se nw nw, 26-7-6e. Prairie & Slick, Dixon 1, nw ne, 4-8-7e. Prairie & Slick, Carar 1, nw ne nw, 9-7-7e. Gypsy, Cotcha 9, nw sw sw, 23-7-6e. Independent, Carpenter 3, nw ne ne, 27-7-6e. Magnolia, Anderson 2, nw se, 18-9-6e. Magnolia, Anderson 3, sw ne, 18-9-6e. Magnolia, Anderson 4, ne sw, 18-9-6e. Carter Oil Co. et al, C. Shaffer 1, ne nw, 35-10-6e. Mraland, Boring 1, ne nw se, 17-9-7e. Barnsdall, Lusty 1, sw ne, 13-5-7e. I. T. I. O. Parnosky 1, nw se se, 7-6-8e. Barnsdall, Kekeya 2, sw se sw, 7-9-7e. Carter, Factor 2, sw se nw, 26-7-6e. Gypsy, Payne 2, sw ne ne, 5-7-7e. Gypsy, Coker 1, se sw sw, 2-8-5e. Papoose Oil Co., No. 1, se nw, 23-10-6e. Hoffman et al, Tecumseh 1, se sw, 24-5-5e. Texas, Lucy 12, nw ne ne, 19-5-8e. Texas, Lucy 11, sw se se, 18-5-8e. Texas, Lucy 10, ne se se, 18-5-8e. Independent, Carpenter 1, owdd, ne, 27-7-6e. Gypsy, Cotcha 10, se sw sw, 23-7-6e. Barnsdall, Hotulka 3a, (twin) se ne se, 22-7-6e. Carter, Coker 2, sw se sw, 2-8-5e.

STEPHENS COUNTY—Smythe et al, Shaw 1, c ne ne, 27-2n-8w. Magnolia, Kagay 24, sw se sw, 34-1s-8w. Wirt Franklin Pet. Corp., Brake "B" 2, sw nw ne, 12-1s-4w. Harry Pace & Continental Oil Co., Houston 2, sw ne ne sw, 2-2s-8w.

TULSA COUNTY—Hoss & Glidden Oil Co., Hawkins 2, se nw sw, 18-19-12e.

WAGONER COUNTY — W. C. Newman, Bruner 2, nw sw, 18-17-17e.

LOUISIANA

ACADIA PARISH—Fred I. Getty, Jennings, Jules Clement 1, (Gulf 3 Acre Lease), 46-9s-2w, 850.75 ft w and 274.29 ft n of sec. Fred I. Getty, Jennings, Jules Clement Jennings Oil Co. 3 Acre Lse. 1, amended location, 46-9s-2w, 483 ft n and 666.69 ft w of sec.

BIENVILLE PARISH — W. G. Gray, Shreveport, Snider 1, 15-16n-6w, 220 ft n and 220 ft w of se cor of sw¼ of ne¼.

BOSSIER PARISH — Woodley Pet. Co., Shreveport, Whitehurst 4, 35-16n-12w, 1800 ft e and 400 ft s of nwc.

CADDO PARISH — Dixie Oil Co., Inc., Shreveport, Slattery B-3, 21-21n-15w, 150 ft n and 200 ft e of swc se. Lide & Davidson, Shreveport, W. E. Glassell 1, 1-19n-15w, 2380 ft n and 1170 ft e of swc.

CALCASIEU PARISH—Salt Dome Oil Co. of La., Inc., New Orleans, Mrs. Gracie Shaw 2, 34-10s-12w, 39 ft n and 765 ft e of swc.

CAMERON PARISH—Calcasieu Oil Co., Inc., Magnolia Pet. Co. & Union Sulphur Co., Sulphur, Lemke 1, 36-12s-10w, 759 ft s and 1395 ft w of sec Sec. 13 in Sec. 36. Shell Pet. Corp., Houston, Mrs. J. B. Watkins 10, 18-12s-10w, 845 ft w and 1300 ft s of nec. Sunshine Oil Corp., Lake Charles, Dupra Vincent 1, 28-12s-10w, 50 ft n and 50 ft w of sec se nw. Yount-Lee Oil Co., Beaumont, Tex., Kaough 2, 28-12s-10w, 545 ft e and 80 ft n of swc nw sw; Kaough 3, 28-12s-10w, 705 ft e and 80 ft n of swc nw sw.

FRANKLIN PARISH—Ruston Drilling Co., Ruston, La., West Va. Timber Co. 1, 23-15n-7e, 1980 ft n and 200 ft e of swc.

LA SALLE PARISH—Arkansas Fuel Oil Co., Shreveport, Urania Lbr. Co. B-12, 17-10n-2e, 305 ft s and 84 ft e of nwc sw. Montague Oil Co., Zenoria, Montague 7, 10-9n-1e, 250 ft s and 250 ft w of nec. Mr. G. W. Zoder, Alexandria, King 2, 13-10n-1e, 250 ft s and 150 ft w of nec se ne.

OUACHITA PARISH—La Del Oil Properties, Monroe, Fee 48, 31-20n-5e, 660 ft s and 660 ft w of nec ne nw. Peerless Carbon Black Co., Monroe, R. L. Moore 5, 51-20n-4e, 3570 ft w and 725 ft s of center of Sec. 26 in Sec. 51. W. Va. O. & G. Co., Monroe, West Va. 7, 5-18n-4e, 1980 ft s and 660 ft e of nwc sw.

RED RIVER PARISH—Eylers Oil & Gas Co., Shreveport, Chaffraix 3, 30-12n-10w, 220 ft s and 220 ft w of nec ne sw.

RICHLAND PARISH — S. R. Humble, Monroe, Binion & Sartor 1, 22-17n-6e, 660 ft s and 660 ft e of nwc sw. S. R. Humble, Monroe, L. Ethridge 1, 28-17n-6e, 1980 ft s and 2006 ft e of nwc ne.

ST. LANDRY PARISH — The Texas Co., Shreveport, Botany Bay Lbr. Co. Fee 2, 4-6s-5e, 586 ft s along east line from ne cor of 20 acre Parrault Tr. and 337 ft w at a right angle in Sec. 4, being approx. 8250 ft s and 3200 ft w of nec of Twp.

TERREBONNE PARISH—The Texas Co., Shreveport, Lake Barre A2, 30-21s-20e, 1370 ft s and 560 ft e of nw c; Taylor Bayou B-1, 28-21s-14e, 2400 ft w and 1325 ft s of nec.

UNION PARISH—Imperial O. & G. Products Co., Monroe, J. F. Pullen 1, 20-20n-4e, 108 ft n and 76 ft e of swc.

WEBSTER PARISH—Ohio Oil Co., Shreveport, Bodcaw Lbr. Co. 43, 24-21n-10w, 660 ft n and 660 ft e of swc nw sw. Palmer Corp., Shreveport, J. H. Tillman 5, 27-21n-10w, 660 ft s and 660 ft e of nwc.

TEXAS

Operator, lease or owner, acreage, well, survey, and distance to lease lines or wells:

ARCHER COUNTY—Campbell 66, 4, B1, DCSL sur No. 3, 42 ft s of No. 2. Simms Oil Co., Dallas, W. P. Ferguson B2, S. P. Ry sur, vey. Roy I. Carter, Wichita Falls, J. R. Parkey, 20, 1C, S 11, H&TC sur, 150 ft from n and w lines. Geo. L. Pace, Wichita Falls, H. Ford 80, 1, E. H. Fitzgerald sur. C. W. Gilliland et al, Wichita Falls, W. F. Niemeyer, 83, 10, 2415 TE&L sur, 300 ft s of No. 6, s½ of w½. W. C. Young, Archer City, W. T. Hutchinson, 37, 1, B 123, Amer. Trib. sur, 150 ft from n and w lines of B 123. Underwood Drilling Co., Wichita Falls, T. B. Wilson, 160, 4, S 12, H&TC sur, 2030 ft from n and 200 ft from e line of s 12. A. T. Wolfe & Sons, Wichita Falls, J. W. Campbell, 24, 1, B 26, DCSL sur, 150 ft from s and w lines of B 26. Panhandle Ref. Co., Wichita Falls, H. O. Prideaux, 105, 15C, A. Rohus sur, 300 ft e of No. 11. Prairie O. & G. Co., Ranger, D. Thompson, 1, T. McCoy sur, 150 ft from n and w lines. Bridwell Oil Co. & Gholke, Wichita Falls, L. F. Wilson 81, 9, B 33, Geraldine sur, 150 ft from n and e lines of B 33. Hi-Land Oil Co., Wichita Falls, P. R. Hefley, 40, 1, B 7, DCSL sur No. 3, 150 ft from s and w lines of B 7. E. B. Madden, Olney, J. T. Richardson, 125, 17, S. Anderson sur, 1050 ft from w and 150 ft from s line. Bailey-Damuth Drilling Co., Waggoner Bldg., Wichita Falls, M. W. Jackson, 136, 1, B 136, W. L. Aldridge sur, 150 ft from e and 300 ft from s line, B 130. L. T. Burns, Wichita Falls, J. T. Richardson, 300, C1, B 17, Scott sur. 750 ft from n and 150 ft from e line B 17. Maycamp Drilling Co., Fort Worth, J. S. Matlock, 50, 1, B 224, J. Saunders sur, 150 ft from n and w lines. C. W. Josey, Fort Worth, H. O. Prideaux, 40, 2, B 24, J. Dorsey sur, 150 ft from e and 450 ft from s line, B 24. Continental Oil Co., Wichita Falls, W. J. Logan A, 200, 2, A. Armes sur, 150 ft from n and 900 ft from e line. Harry Hines, Wichita Falls, G. B. Hamilton, 144, 1, S 5, Crawford sur, 750 ft from s and wlines of B 5. R. N. Chancellor, 64, 1, H. Allsman sur, 150 ft n of center of s line. M. A. Dowlen, 79, 1, B 24, H&TC sur, 2640 ft from e and 450 ft from s line, B 24, Freeman & Grebin, Wichita Falls, Henning, 60, 4, B 21, G. P. Mead sur, 300 ft from e and

150 ft from s line. Humble, Wichita Falls, Hamilton A, 100, 3, BBB&C sur, 600 ft from e and 461 ft from s line.

AUSTIN COUNTY—Humble, Houston, E. M. Bracey A, 50, 2, W. C. White sur, 728 ft from sw and 618 ft from se line.

BROWN COUNTY—Superior Oil Prod. Co. & Lamb, Box 172, Brownwood, R. A. Broocke, 264, 1, No. 645 J. Padilla sur, 825 ft from s and 300 ft from e line. Royal Pet. Corp., Brownwood, G. Etheridge, 314, 13, KCSL sur, 1580 ft from n and 995 ft from e line. Humble Wichita Falls, A. W. Armstrong, 145, 17, J. Delgado sur, 467 ft from n and 700 ft from e line. Argus Oil Co., Inc., Brownwood, W. H. Mayes, 115, 7, No. 609 J. M. Ross sur, se corner; 8, 300 ft e of No. 3. V. V. Lester, Dallas, F. W. Turner, 80, 1, B 55, M. Duncan sur, 150 ft from s and e lines. Paramount Royalties, Inc., Brownwood, W. H. Mayes, 115, 3, B 606, J. M. Ross sur, 300 ft s of No. 1. A. L. Mattocks et al, Coleman, L. D. Sanderson, 42, 1, S 121, M. James sur, 150 ft from n and 932 ft from e line.

BURLESON COUNTY—Lita O. & G. Co., Caldwell, J. P. Sparks, 180, 3, H. E. Davis sur, 420 ft sw of No. 2.

CALLAHAN COUNTY—E. V. Richard et al, Cisco, Berry, 260, 1, S 145, BBB&C sur, 150 ft from n and e lines. Warren-Hayes et al, Cisco, W. M. Abel, 80, 2, S 32, D&D Asy. sur, 300 ft n of No. 1; 3, 300 ft n of No. 2. Humphereys Bros., Inc., Brownwood, T. W. Gary, 80, 3, S 40, D&D Asy. sur, 150 ft n of No. 2. Gibson & Johnson, Mims Bldg., Abilene, H. Tatum, 80, 1, S. J. McWaters sur, 660 ft from n and e lines. Texas Co., Wichita Falls, P. G. Hatchett, 40, 25, S 24, D&D Asy. sur, 250 ft w of No. 22 ne¼ of sw¼. Moutray Oil Co., Abilene, P. G. Hatchett, 80, 6B, S 23, D&D Asy. sur, 750 ft s and 150 ft w se¼ of ne¼; 5B, 450 ft s and 150 ft w of ne cor se¼ of ne¼. Texas Co., Wichita Falls, P. G. Hatchett, 3B, S 23, D&D Asy. sur, 150 ft n and 150 ft w of se cor ne¼ or ne¼; P. G. Hatchett 40, 1C, S 24, D&D Asy. sur, 150 ft s and 150 ft e nw cor sw¼ of nw¼.

CALDWELL COUNTY—Humble, Houston, T. Briscoe, 56, 1, J. Hinds sur, 150 ft from s and w lines. L. G. Hanson, 82, 4, J. Hinds sur, 150 ft from n and e lines. J. A. Northcutt A, 25, J. Hinds sur, 150 ft from s and e lines. J. L. Northcutt A, 25, 1, J. Hinds sur, 226 ft from n and 205 ft from w line. J. R. Tiller B, 180, 3, J. Hinds sur, 150 ft from n and w lines. J. A. Tiller, 40, 1, J. Hinds sur, 150 ft from n and e lines. Cranfill & Reynolds, Cisco, L. G. Hanson, 10, 1, J. Hinds sur, 165 ft from e and 150 ft from s line. Humble, Houston, A. Hinds A, 89, 1, J. Hinds sur, 226 ft from n and 191 ft from w line; 2, 226 ft from n and 491 ft from w line. J. L. Northcutt A, 25, 2, J. Hinds sur, 1514 ft from s and 150 ft from w line. J. R. Tiller, 180, 2, J. Hinds sur, 226 ft from n and 546 ft from w line. J. R. Tiller A, 20, 2, J. Hinds sur, 1514 ft from s and 150 ft from w line. Moses-Baggett, B 87, 4, S. Shupe sur, 150 ft from e and 1514 ft from s line. Thurman & Brown, Petroleum Bldg., Fort Worth, Texas, A. C. Bridges, 10, 1, A. Floyd sur, 100 ft from e and 150 ft from s line.

COOKE COUNTY—Lloyd Oil Corp., Fort Worth, D. B. Wheelock, 20, 1, C. Underwood sur, 150 ft from n and w lines. Pure Oil Co., Fort Worth, J. C. Embry, 80, 7, T. J. Moss sur. Kewanee O&G Co., Tulsa, Okla., Dennis D, 26, 1, S. Hernandez sur, 150 ft from n and w lines.

COLEMAN COUNTY—Prairie O. & G. Co., Ranger, R. D. Logan, 100, 2, No. 631 H. Rhodes sur, 300 ft w of No. 1. Meredith, Benton, Cameron & Smith, Cisco, E. Singletary, 80, 1, S 5, B 628, S. B. Nixon sur, 936 ft from e and 150 ft from s line. Dallas Pet. Co., Houston, J. H. Babbing,ont 160, 5, No. 79, BF sur, 2215 ft from n and 1710 ft from e line.

CLAY COUNTY—Saxet Oil Co., Petrolia, Fee C, 136, 18, L 14, B 13, Chilson sur, ne corner of lot 18. Mid-Continent Holding Corp., Wichita Falls, L. S. Wright, 107, 5, 2632 TE&L sur, 300 ft n of No. 3. Saxet Oil Co., Box 157, Petrolia, F. B. Wyatt, 48, L 12, B 25, Lockridge sur, 295 ft from n and 120 ft from e line L 12.

CONCHO COUNTY—Duffy & Loofburrow, Wichita Falls, W. L. Gilliam, 160, 1, S 21, B 10, H&TC sur, 1150 ft w and 250 ft n of se cor of ne¼.

CHAMBERS COUNTY—Pure Oil Co., Fort Worth, W. F. Mayes, 3, E. H. R. Wallis sur, 400 ft e of No. 1.

CARSON COUNTY—Cities Service Gas Co., Bartlesville, Okla., Burnett, 16, S 104, B 5, I&GN sur, center of nw¼ of s 104. R. M. Brown, 320, 1, S 238, B B2, H&GN sur, (Gray County). Empire G. & F. Co., Pampa, Magnolia A, 160, 5, S 91, B 4, I&GN sur, 330 ft from n and w lines nw¼ of se¼. Reynolds Drilling Co., Box 156, Pampa, E. Cooper, 80, 1, S6 B9, I&GN sur, 330 ft from s and e lines e½ of nw¼.

DUVAL COUNTY — G. M. Porter, San Diego, W. L. Moody, 40, 2, S 60, nw¼ of nw¼, 150 ft from n and 450 ft from w line. Magnolia Pet. Co., Dallas, Hahl, 190, 2, No. 250 sur, 150 ft from n and e lines. Texas Co., Houston, C. W. Hahl, 77, 3, No. 250 R. Gunter sur, 150 ft from s and w lines.

ERATH COUNTY — Wickens & Spores, Strawn, W. T. Bandy, 110, 1, 750 ft from s and w lines.

EASTLAND COUNTY—J. A. Garver, Rising Star, J. D. Fields, 1288, 1, S 4, J. Rubarth sur, 1532 ft from n and 707 ft from e line. A. M. Bibbee, Abilene, F. Moore, 80, 1, 3187 TE&K sur, 150 ft w of center of e line.

FORT BEND COUNTY—Gulf Prod. Co., Houston, T. W. Davis, 53, M. Young sur, 400 ft ne of No. 36. Humble, Houston, M. C. Camp 4, Wm. Stafford sur, 1068 ft from w and 296 ft from s line.

GRAY COUNTY—Cities Service Gas Co., Bartlesville, Okla., R. M. Brown, 320, 1, S 238, B B2, H&GN sur, center of se¼ of Sec. 238. Gulf Prod. Co., Fort Worth, W. Jackson, 160, 1, S 62, B B2, H&GN sur, 305 ft from w and 295 ft from s line. Texas Co., Wichita Falls, A. Chapman, 160, B2, S 50, B A9, H&GN sur, 990 ft from s and w lines of Sec. 50; G. H. Saunders, 480, 5, S 12, B A6, H&GN sur, 450 ft from e and 400 ft from s line s 12; B. Bull, 480, 2, S 2, B B2, H&GN sur, 990 ft from s and w lines of Sec. 2.

HARDIN COUNTY—Paraffine Oil Co., Batson, Fee 44, Knight sur, 66 ft from n and 78 ft from e line.

HARRIS COUNTY—J. W. Taylor, Humble, Long 2, 2, R. F. Dunman sur, center. Rio Bravo Oil Co., Houston, Settegast, A 182, A 14, J. Kopman sur, 400 ft n of A12; Settegast, A15, J. Kopman sur, 150 ft w of A13.

HOWARD COUNTY—Magnolia Pet. Co., Dallas, H. Hyman 2, S 88 B 29, W&NW sur, 2640 ft from e and 2540 ft from s lin Sec. 88.

JACK COUNTY—G. B. Chandler, Jacksboro, Ellis-Dubose, 20, 1, Jas. Williams sur, se corner; Ellis-Dubose, 20, 2, Jas Williams sur, west of No. 1; Ellis-Dubose, 20, 3, Jas. Williams sur, north of No. 1; Ellis-Dubose, 20, 4, Jas. Williams sur, nw corner; Ellis-Dubose, 20, 5, Jas. Williams sur, west central part of lease; Ellis-Dubose, 20, 6, Jas. Williams sur, sw corner; Ellis-Dubose, 20, 7, Jas. Williams sur, ne corner; Ellis-Dubose, 20, 8, Jas. Williams sur, north central part of lease. Prairie O. & G. Co., Ranger, M. Bryson, 120, 5, I. Hughson sur, 750 ft s of No. 4; M. Bryson, 120, 4, I. Hughson sur, 1134 ft from n and 330 ft from w line; M. Bryson, 120, 3, I. Hughson sur, 330 ft from s and w lines. Panhandle Refg. Co., Wichita Falls, J. T. O. Smith, 171, 3, I. Hughson sur, 810 ft from n and 330 ft from w line.

JIMM HOGG COUNTY—Alworth, Stevens, Hild & Co., Laredo, M. Garza, 40, 16, S 40, B 14, 150 ft from ne and 660 ft from se line.

JEFFERSON COUNTY—Yount-Lee Oil Co., Beaumont, McFaddin, 101, P. Humphreys sur, 1268 ft from w and 955 ft from n line; McFaddin, 102, P. Humphreys sur, 1726 ft from w and 788 ft from n line.

LOVING COUNTY—W. T. Wells, Box 407, El Paso, A. M. Walters, 640, 1, S 64, B 1, W& NW sur, center of w¼ of e¼.

LIBERTY COUNTY—Gulf Prod. Co., Houston, E. W. Boyt, 618, 1, S 22, H&TC sur, 1400 ft from w and 1800 ft from s line.

MILAM COUNTY—W. A. Jones, Minerva, W. A. Robinson, 126, 2, J. Leal sur, 300 ft sw of No. 1.

MONTGOMERY COUNTY—B. J. Harper Oil Co., Dallas, E. Gay, 96, 1, Wm. Landrum sur, 369 ft from n and 298 ft from e line.

MONTAGUE COUNTY—Texas Co., Wichita Falls, M. H. Salmon, 23, C4, Wm. Zuber sur, 150 ft from n and 575 ft from e line. Hulett & Palladay Oil Co., Oklahoma City, W. B. Grimes, 213, 1, L. Ramsey sur, 150 ft from n and w lines.

NAVARRO COUNTY—Jack Wilder, Rice, J. B. Bradley, 50, 2, R. C. S. L. sur, 400 ft n of No. 1.

PECOS COUNTY—Marland Prod. Co., Fort Worth, I. G. Yates, A 320, 8S, S 60, B 1, I&GN sur, 108 ft se of No. 6S; I. G. Yates, A 320, 7S, S 60, B 1, I&GN sur, e¼ of 298 ft nw of 6S; I. G. Yates, A 320, 6S, S 60, B 1, I&GN sur, Sec. 60, 257 ft from n and 2298 ft from w line; I. G. Yates, A 320, 5S, S 60, B 1, I&GN sur, 230 ft sw of S2; I. G. Yates, A 320, 4S, S 60, B 1, I&GN sur, 125 ft n of 2S; I. G. Yates, A 320, 3S, S 60, B 1, I&GN sur, 124 ft se of 1S; I. G. Yates, A 320, S 60, B 1, I&GN sur, 636 ft from n and 460 ft from w line. E .W. Talbot et al, Fort Stockton, Unsicker, 160, 1, S 25, B 10, H&GN sur, 150 ft from s and e lines se¼ of se¼. Tidal Oil Co., Fort Worth, University, 320, 1, S 16, B 20, Univ. Lands sur, 1350 ft from w and 33 ft from s line of Sec. 16.

PANOLA COUNTY—Kirby-Rowe Drilling Co., Shreveport, La., T. C. Adams, 100, 4, E. Jones sur, 350 ft from w and 4200 ft from n line of survey. Texas Co., Shreveport, La., T. C. Adams, 200, A10, T. Cox sur, 1320 ft n of No. A9. Natural Gas Prod. Co., Shreveport, Floyd, 114, 3, B. C. Jordan sur, 4128 ft from e and 1262 ft from s line of Sur.

PALO PINTO COUNTY—J. H. Wickens et al, Strawn, Hart, 142, 1, A. Ashworth sur, 750 ft from n and 330 ft from w line.

SHACKELFORD COUNTY—Dull Earls Texas Co., Box 930, Albany, J. B. Matthews, 70, 7, S 32, B 1, E. T. Ry. sur, 300 ft w of No. 1 se¼ of ne¼. E. A. Engel, Albany, J. B. Matthews, 40, 3, S 32, E. T. Ry. sur, 300 ft w of No. 2. Humble, Wichita Falls, W. P. Newell, 334, 1, S 87, E. T. Ry. sur, 1385 ft from n and 1406 ft from w lines s 87. Less Combest et al, Mineral Wells, E. Anderson, 116, 1, S 65, L. A. L. sur, 1200 ft from n and w lines of nw¼; J. B. Matthews, 40, 1, S 55, E. T. Ry. sur, 150 ft from s and e lines of se¼ of ne¼. R. E. Forrester, Moran, P. L. Chaney, 98, 1, S 41, Univ. Lands sur, 150 ft from s and w lines. Chas. Gordon, Moran, G. E. Waters, 40, 1, S 61, Univ. Lands sur, 600 ft from w and 450 ft from s line; G. E. Waters, 40, 2, S 61, Univ. Lands sur, 300 ft w of No. 1.

STEPHENS COUNTY — Chestnut-Smith Corp., Tulsa, Okla., V. B. Hodges, 80, 1, B 6, S 85, T&P sur, 330 ft from w and 250 ft from s li w½ of nw¼. Amerada Pet. Corp., Fort Worth, A. Dickie, 800, 3, No. 7, G. Waggoner sur, 2250 ft se of No. 1. Swensondale Pet. Corp., Caddo, P. Swenson, 198, 35, S 3, Bayland Asy. sur.

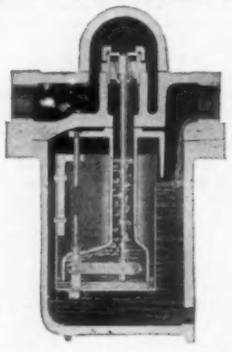
STERLING COUNTY—Tucker, Gruber et al, San Angelo, Elwood, 160, 1, S 54, B 18, S. P. Ry. sur, 300 ft from n and 150 ft from e line.

THOCKMORTON COUNTY—Loggie & Arendt Oil Co., Albany, J. Fowler, 80, 4, 906, TE&L sur, 783 ft from e and 150 ft from s line se¼ of ne¼. Roeser & Pendleton & Holder, Albany, R. M. Titus, 80, 2, N. Williams sur, 300 ft w of No. 1.

WICHITA COUNTY—Mogren & Anderson, Electra, E. E. Goetze, 111, 16, SA&MG No. 2 sur, 450 ft from w and 750 ft from s line. Riner & Bailey, Wichita Falls, J. D. Michie, 40, 4, B. N. Ferguson sur, 465 ft e of No. 1. Tedford Bros. et al, & Taft, Wichita Falls, A. W. Burnside, 40, 2, J. M. Sharp sur, 150 ft from n and w lines. Ryan Consolidated Pet. Corp., Bartlesville, Okla., J. J. Waggoner, 22, 1B, W. R. Eaves sur, 20 ft e of No. 1. W. H. Hammon, Wichita Falls, T. F. Mitchell, 40, 7, J. T. Lewis sur, 300 ft s of No. 5. D. Gray et al, Electra, T. W. Roberts, 40, 2, S 17, H&GN sur, 300 ft s of No. 1. J. H. Cotton, Wichita Falls, H. M. Munger, 40, 1, B 31, W. V. F. L. sur, 450 ft from e and 150 ft from s line. L. G. Bradstreet Co., Wichita Falls, W. T. Waggoner, E 73, 1, S 13, HT&B sur, 750 ft from n and 330 ft from w line. Jno. W. Caldwell, Wichita Falls, J. A. Kemp, 40, 14, S 26, B 7, W. V. F. L., sur, 50 ft s of No. 12. W. C. Forbess, Fort Worth, M. M. Maywood, 148, 2, B 195, Waggoner Col. sur, 300 ft w of No. 1. Bullington, Lee, Pendleton & Bullington, Wichita Falls, G. Jennings, 50, 3, S 12, HT&B sur, 450 ft from s and e lines.

WILBARGER COUNTY—A. L. Derby, Wichita, Kas., W. T. Waggoner, 40, C3, S 43, MEP&R sur, 205 ft from w and 700 ft from n

Wright-Austin "Airxpel" Bucket Type Steam Trap



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li ne¼ of se¼. C. P. Burton, Wichita Falls, W. T. Waggoner, G 40, 2, S 18, B 4, H&TC sur, 308 ft w of No. 1. C. F. Kolp, Electra, W. T. Waggoner, G 60, 6, S 18, B 4, H&TC sur, 341 ft nw of No. 5. Fain-McGaha Oil Corp., Wichita Falls, W. T. Waggoner, L 200, 12, S 31, B 4, H&TC sur, 1142 ft from e and 205 ft from s line. Easter Oil Corp., Wichita Falls, Waggoner, A 80, 4, S 26, B 4, H&TC sur, 408 ft se of No. 3; Waggoner, A 80, 3, S 26, B 4, H&TC sur, 510 ft se of No. 2. W. T. Knight, Wichita Falls, W. T. Waggoner, 160, 1, S 1, B 13, H&TC sur, 150 ft from n and e lines of nw¼.

WEBB COUNTY—R. O. Barnsley, Laredo, Fee 40, 1, S 868, B 15, 150 ft from e and 581 ft from s line. Trapshooter Reilly Oil & Royalties Co., Laredo, S. Benevides, 40, 1, S 685, ne¼ of nw¼, 150 ft from n and e lines.

WHEELER COUNTY—Texas Co., Wichita Falls, G. C. Gordon, 160, 2, S 91, B 17, H&GN sur, 660 ft s and w lines of nw¼.

WINKLER COUNTY—Dixie & Southern Crude Oil Purchasing Co., Shreveport, La., I. Hendrick, 275, 2, S 21, B 26, 2310 ft from n and 330 ft from e line of s 21.

YOUNG COUNTY—Mid-Texas Pet. Co., Oklahoma City, R. J. Calvin, 30, 1, A. Rohus sur, east central. Cooper & Hamilton, Olney, J. K. Thomas, 68, 1, 155, TE&L sur, 1364 ft from w and 816 ft from s line of s 155. L. W. Callender, Wichita Falls, G. B. Hamilton, 60, 1, 3401, TE&L sur, 430 ft from e and 750 ft from s line. Thos. R. Casey, Graham, J. L. Boone, 80, 2, BBB&C sur, 150 ft from n and 690 ft from w line of nw¼ of ne¼. W. L. Hawkins, Wichita Falls, J. C. Owen, 160, 1, BBB&C sur, 150 ft from w and 600 ft from s line. Steed & Gaus, Wichita Falls, L. A. Snider, 400, 14, E. Wilson sur, 450 ft n of No. 7.

ZAPATA COUNTY—Magnolia Pet. Co., Dallas, E. Cuellar, 640, 1, S 246, 660 ft from s and e lines.

CALIFORNIA

ELWOOD—Barnsdall Oil Co.'s Luton-Bell 7, 22-4-29.

HUNTINGTON BEACH—American Oil Producers, Ltd.'s Grant-Neiswender 1, 2-6-11.

KERN RIVER—Pan American Pet. Co.'s 20, 22-28-27.

KETTLEMAN HILLS—Petroleum Securities Co.'s Robinson 1, 14-22-17; Malmbury 1, 24-23-18. Shell Oil Co.'s Fay 1, 28-23-19.

LONG BEACH—Dabney-Johnston Oil Corp.'s 38, 13-4 13; 39, 13-4-13. Petroleum Securities Co.'s Janiach 1, 24-4-13; Duncan 1, 24-4-13. Panill Refining Co.'s 1, 24-4-13. D. D. Dunlap's 2, 24-4-13.

MT. POSO—Petroleum Securities Co.'s Glide 35-1, 35-27-28; Glide 13, 21-27-28; Glide 14, 21-27-28; Glide 15, 21-27-28; Glide 16, 21-27-28; Gardner 1, 26-27-28. Shell Oil Co.'s Knapp 1, 28-26-28.

POTRERO—Cypress Pet. Co.'s deKoch 1, 34-2-14.

RICHFIELD—Superior Oil Co.'s Mosley 1, 33-3-9.

ROUND MOUNTAIN—Petroleum Securities Co.'s Coffee 1, 6-28-29; Coffee 2, 6-28-29.

SANTA FE SPRINGS—George F. Getty, Inc.'s S. F. S. 37, 5-3-11.

SANTA BARBARA COUNTY—Continental Oil Co.'s Kittie C. Bailard 1, 33-4-25.

SUNSET—North American Oil Cons.'s Bronco 1, 8-11-23.

VENTURA—Shell Oil Co.'s Taylor 43, 28-3-23.

Kansas Royalty Owners Favor Oil Tariff

Wichita, Kans.—Kansas royalty and independent oil operators met at Wichita, April 24, for an informal discussion of protective tariff on importation of crude into the United States.

The meeting adopted a resolution going on record as unanimously in favor of the proposed tariff. Four prominent Wichita operators were selected as a committee to formulate a set of resolutions and to see many other independent operators and royalty men not present. The committee includes T. C. Johnson, A. D. Allison, Ralph Pryor and Marvin Lee.

The meeting was sponsored by the Mid-Continent Royalty Owners Association. Guy Woodward, chief counsel of the association, made the principal address. W. E. Cook, also of the association, called the meeting to order and presided until Marvin Lee was chosen as presiding officer. Cook, who has been in Wichita a week getting local men interested in the meeting and tariff question, led in the general discussion of the question.

Meetings have been held by the Mid-Continent Royalty Owners Association in Oklahoma and Texas and it has the backing of independent operators in these states. Other meetings will be held and it is hoped by then that this is the start of a nation-wide movement in behalf of the tariff on incoming oil.

The speakers pointed out that the importation of crude oil last year into the United States was nearly 80,000,000 barrels, whereas, exports were only around 18,000,000 barrels. In their belief if this amount of crude was taken from the market the local markets would immediately show vast improvements. This foreign oil can be moved from South America to the Atlantic Seaboard cheaper than domestic crude can be transferred to the Atlantic.

Former Congressman E. B. Howard from Oklahoma, is in charge of an office opened at Washington, D. C.

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WILDCATS FROM ALL SECTIONS

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY—		
McDonald Bros., Wilson A-1, 25-15-18	38	2873
Atlantic O. P. Co. & E. M. Jones, Allen A-1, 25-15-18	*	3136
UNION COUNTY—		
Carter Bell et al, Terrell 1, 27-18-14	*	2594

ASHLEY COUNTY—Atlantic O. P. Co.'s Bledsoe 1, 20-15-7, r to bottom, td 2554 ft.

BRADLEY COUNTY—Ohio Oil Co.'s Sou. Lbr. Co. 2, 19-16-9, coring 3229 ft. Phillips Pet. Co. et al's J. W. Kline 1, 28-16-12, lcn.

CALHOUN COUNTY—Phillips Pet. Co. et al's Eagle Mills Lbr. Co. 1, 11-16-12, lcn.

CLARK COUNTY—Wm. Henry, Tr.'s, Clark 1, 34-9-21, sd 1385 ft.

CRAWFORD COUNTY—Industrial O. & G. Co.'s Brownlee 2, 22-9-31, lcn.

COLUMBIA COUNTY—G. W. Dawley et al's Fullenwider & Kitchen 1, 12-17-22, sd wo 2847 ft. Helena O&G Co.'s Pickler 1, 19-19-22, sd 2390 ft.

CHICOT COUNTY—W. S. Smith's Meyer 1, 19-19-2, sd wo 850 ft. Joe Crawford's Cashion 1, 14-18-2, ds stuck 2330 ft.

DALLAS COUNTY — Robt. H. Dedman's Hillman 1, 20-10-13, temp abn, td 1145 ft.

DREW COUNTY—McClintock & Goedke's Ogle 1, 35-13-5, old well trying to clean, td 2530 ft. Ohio Oil Co.'s Jerome Lbr. Co. 1, 13-15-4, dr 3500 ft.

FAULKNER COUNTY—Gold Creek O&G Co.'s Stermer 1, 17-4-13, temp abn, td 3462 ft.

FRANKLIN COUNTY — Ozark Nat. Gas Co.'s McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-3-19w, sd 2988 ft. Chaywood Oil Co.'s Malvern Lbr. Co. 1, 17-2-17, shot formation 1660-68 ft, fsh bailer lost in hole.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, sd 1400 ft.

JOHNSON COUNTY — Ark. Nat. Gas Corp.'s Bynum 2, 12-10-24, shooting bit again 2500 ft; McPherson 1, 10-10-24, trying to set 7-inch cas, td 3360 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 21-12-13w, sd 2941 ft.

LOGAN COUNTY — Ark. La. Pipe Line Co.'s Hanna 1, 26-7-23, dr 1525 ft. Ark. Nat. Gas Corp.'s W. H. Parks 1, 26-8-24, pulling cas to abn, td 4600 ft.

OUACHITA COUNTY — McDonald Bros.' Wilson A-1, 25-15-18, pumping 45 bbls 15 per cent sw, td 2873 ft. Chas. McDonald's Wilson B-2, 25-15-18, dr 2550 ft. Magnolia Pet. Co.'s C. M. & K. Wilson 1, 25-15-18, tested 8 joints sw and salty mud with light show oil in Halliburton test 20 minutes 2795 to 2836 ft, cored br sand showing oil 2852-59 ft, arr ds test 2859 ft. Atlantic O. P. Co. & E. H. Jones' Allen A-1, 25-15-18, no casing set, dry abn, td 3136 ft. Root Ref.'s Wilson 1, 25-15-18, bailed and swabbed, bailing oil and drilling mud off bottom 3 ft sand open hole, td 2844 ft. Flaucher et al's Bucks 1, 7-15-17, sd 2475 ft. Cumberland Pet. Co.'s Burton 1, 24-15-18, dr gumbo 1750 ft. Timberlake et al's Wright 1, 25-14-18, dr 1920 ft. Geo. Kouri et al's Henson 1, 24-15-18, lcn. L. L. McDonald et al's Crowley 1, 27-15-18, dk pat.

ST. FRANCIS COUNTY—W. F. Harris's Halbert 1, 32-4-4, lcn.

UNION COUNTY—Sundby et al's Yocum 1, 29-16-17, coring 2820 ft. Hawthorne O&G Co.'s Smith 1, 8-16-17, r to bottom 2940 ft. La. Oil Ref. Corp.'s Manley 1, 15-15-19, dr 3657 ft. Foster et al's Murphy Land Co. 1, 22-17-17, sd 1400 ft. J. O. Moore, Tr.'s Union Sawmill 1, 11-18-12, sd 2890 ft. Carter Bell et al's Terrell 1, 27-18-14, dry abn, td 2594 ft. Wesson et al's Booth 1, 12-15-19, dr 2085 ft. J. P. Hawkins et al's Goodwin 1, 6-17-15, sd 1204 ft. McDonald Bros.' Mayfield 1, 29-19-15, sd 2200 ft. Standard Oil Co.'s J. R. Burns 5, 31-17-15, fsh joint lin td 2256 ft. Goodwin 1, 36-17-16, dk. Grimes Bros.' Hill 2, 7-18-14, rig up wo. J. C. Marcum's DeYambert 1, 5-19-4, ds stuck 3312 ft. W. M. Coates, Tr.'s, McDuffie 1, 32-19-16, sd 142 ft. J. W. Olvey's Cottrell 1, 22-19-17, dr 3170 ft. Gulf Ref. Co.'s Rosa L. Cook 1, 1-18-15, dr grey sand 3345 ft. Gaddy 2, 30-17-14, killed as gasser 2859 ft, coring grey sandy lime 2962 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

EAST TEXAS

BOWIE COUNTY—Hooks O&G Co.'s Rosenberg 1, King sur, temp abn, td 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd 1920 ft.

RED RIVER COUNTY—D. M. Buffington's Hoosier 1, Hughart sur, dr 1600 ft. Shad Harper's Garland 1, Jos. Wagley sur, sd wo 1862 ft. Johnson Pet. Co.'s Randolph 2, Dean sur, sd wo 1440 ft.

SHELBY COUNTY — Chapparal Oil Co.'s Holt 2, Matthew Moore sur, sd wo 3004 ft. Gulf Ref. Co.'s Caraway 1, Patterson sur, dr shale, lime, shells 4087 ft.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
DE SOTO PARISH—		
R. O. Roy's Sample 1, 1-13-14	*	3102

BIENVILLE PARISH—W. G. Gray, Tr.'s Snyder 1, 15-16-6w, dk.

BOSSIER PARISH—Nell & Lanier's Biedenharn 1, 23-21-14, sd 790 ft. Big Ben Oil Co.'s Stewart 1, 15-18-12, sd wo 1300 ft. Walker et al's Antrim 1, 28-22-13, tested show oil no gas or sw 3048 ft, arr deepen. John F. Woodman's Bolinger 1, 9-22-11, tested sw, sd wo 3100 ft. Magnolia Pet. Co.'s B. M. Cook 1, 2-22-11, coring sand and shale 3105 ft. Triangle Drilling Co.'s J. H. Fullilove 1, 11-17-12, rig up.

CADDO PARISH—D. C. R. Oil Co.'s Hunter Est. 1, arr drill plug after setting 6-inch casg 600 ft oil in hole, td 2422 ft. J. O. A. Carper's Hammock 2, 34-18-16, temp abn, td 920 ft. Lide & Davidson's Glassell 1, rig up. Root Ref.'s Liebman 1, 12-19-15, ru.

CATAHOULA PARISH — Lochnager O&G Co.'s Taliaferro 1, 26-9-6e, sd 900 ft.

DE SOTO PARISH—P. J. Becker's Tull 1, 23-12-15, junked old hole, td 1361 ft, skid dk over new hole. Benson O&G Co.'s Jackson 1, 3-10-13, lcn abn, will not be drilled. Carlton Drilling Co.'s Stephens 2, 12-11-16, sd wo 2046 ft. R. O. Roy's Sample 1, 1-13-14, dry abn, td 3102 ft. Thorn Oil Co.'s Burford 1, 22-14-14, sd wo 3020 ft. Lonstreet Synd.'s Ramsey 1, 33-13-16, fsh csg, td 2808 ft.

FRANKLIN PARISH — Ruston Drilling Co.'s W. Va. Timber 1, 23-15-7e, rig up. Davis et al's Moore 1, 12-11-6e, sd 1430 ft.

GRANT PARISH—Carter & Collins' Ball Lbr. Co. 1, 29-7-1w, temp. abn, td 2410 ft. Hardtner & Tannehill 1, 9-6-1w, dr sandy shale 2516 ft.

JACKSON PARISH—Geo. O. Baird's Tremont Lbr. Co. 1, 24-17-1w, lcn.

LINCOLN PARISH—V. E. Shaw et al's Voss 1, 1-20-3w, sd wo 2722 ft.

MOREHOUSE PARISH — Woodley & Collins' Harp 1, 22-22-7e, sd wo 3006 ft. Rainbow Oil Co.'s Louisville Cooperage 1, 33-22-8e, dk.

NATCHITOCHES PARISH — S. D. McDaniels' Clark-Morse Lbr. Co. 2, 23-5-6w, tested sw, show gas est. 1 mil ft 8 ft sand, sd wo 2536 ft. Robeline O&G Co.'s Cassady 1, 7-8-9w, arr ds test for show gas 3100 ft.

OUACHITA PARISH—Ouachita Nat. Gas Co.'s D'Arbonne B-2, 25-19-2e, sd 3349 ft. Phillips et al's School Fee 1, 16-16-4e, sd wo 3520 ft.

RAPIDES PARISH — G. E. Silbertson's Willemach 3, 13-5n-4w, sd wo 2250 ft. Glenmora Pet. Co.'s Fee 1, 1-2n-2w, sd 3850 ft.

RICHLAND PARISH—S. C. Wilson's Buie 1, 17-15-7e, sd 1946 ft.

SABINE PARISH—W. J. Garnier's Bowman-Hicks 1, 16-7-12, sd 625 ft. R. L. Gay, Tr.'ss Bowman-Hicks 2, 14-7-14, dr lime 3414 ft. Bowman-Hicks 3, 14-7-14, dr 1980 ft. Long-Bell Lbr. Co. 1, 26-8-14, rig up. Sabine Lbr. Co. 1, 13-7-14, temp. abn, td 2936 ft. A. H. Tarver's Long-Bell Lbr. Co. 1, 29-8-13, cemtd 10-inch cas 160 ft, dr 1045 ft.

TENSAS PARISH—Enochs et al's Curry 1, 29-11-12e, sd 3583 ft.

UNION PARISH—Texas Co.'s F. M. Fuller 1, 9-21-2w, dk. Sunby et al's Sec. Trust 1, 6-23-1e, sd wo 2300 ft. C. E. Carmattes' Tugwell 2, 21-22-1e, arr set 6-inch cas, td 1931 ft. Carter & Wingfield's Clark A-3, 8-23-1e, dk. Security Trust 2, 7-23-1e, lcn abn will not be drilled. H. C. McDonald's Union Sawmill 2, 18-23-1e, sd 1500 ft.

WEBSTER PARISH—P. Hudson's Slack 1, 1-22-11, sdtr ds 2000 ft, td 2592 ft. Nemours Corp.'s Munn 2, 1-22-10, tested 4 mil ft gas 2623 ft. Magnolia Pet. Co.'s Atkins 1, 4-22-9, dr 2550 ft. John F. Woodman's Boyd 1, 3-22-11, dk.

OKLAHOMA

GRANT COUNTY—T 28n, R 3w, Sec. 24, Lario O. & G. Co. et al's Conneil 1, nwc, drlg 4305 ft.

WOODS COUNTY—T 27n, R 16w, Sec. 33, Sinclair's Share 1, e ne sw, rigging up rotary.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent & Nat'l Union's McNeil 1, nwc ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 22w, Sec. 14, Hoffer Oil Co.'s Cooper 1, nwc se, sd 4182 ft.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu Vi Bar et al's 1, sec sw, drlg 4820 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden's Vollner 2, nec se ne sw, lost tools 5640 ft sd.

WOODWARD COUNTY—T 24n, R 17w, Sec. 32, Otstot Dev. Co.'s Simmons 1, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller et al's Capenhaver 1, nwc, spudded and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, Washoma Oil Co.'s Acre 1, swc ne, rig.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer's White 1, sec nw, 4755 ft ur 6-inch csg.

WOODWARD COUNTY—T 23n, R 20w, Sec. 9, Billy Oil Co.'s Wyatt 1, c se, sand 3200-40 ft, hfw 8-inch at 3350 ft, td 3612 ft; T 23n, R 17w, Sec. 2, John Farrand's Belva 2, csl sw se, drlg 721 ft.

MAJOR COUNTY—T 23n, R 16w, Sec. 4, Wilson et al's Creech 1, nec sw, sd 510 ft.

WOODWARD COUNTY—T 21n, R 21w, Sec. 25, Sharon's Elmore 1, swc, sd 3025 ft; T 21n, R 19w, Sec. 15, Burgoyne Bros.' 1, swc se ne, sd 1950 ft.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al's Horton 1, c ne ne, spudded and sd.

GARFIELD COUNTY—T 20n, R 4w, Sec. 9, Marland's Looman 1, nec se, sd 5738 ft; Sec. 12, Marland's Miller 1, swc, sd 4586 ft, hfw.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, C. E. Love et al's Phillips 1, c nw sw, spudding.

DEWEY COUNTY—T 18n, R 15w, Sec. 9, Huckelby & McCoy's Perfect 1, nec, sd 4500 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healy & Consolidated Drlg. Co.'s Quier 1, sec sw, sd 3790 ft.

KINGFISHER COUNTY—T 16n, R 6w, Sec. 27, Crawford & McKenna's Sturgeon 1, nec sw, sd 4895 ft.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears' Piatt 1, swc ne, sd 3223 ft.

OKLAHOMA COUNTY—T 13n, R 3w, Sec.

18, Slick & Bailey's Lufkin 1, c ne se, ur 5-inch at 5120 ft, sd.

CIMARRON COUNTY—T 5n, R 5e, E.C.M., Sec. 22, Magnolia's School Land 1, c se ne, sd 2640 ft.

TEXAS COUNTY—T 1n, R 15 E.C.M., Sec. 25, Skaer et al's Hitch 1, nwc, rigged up and sd.

OSAGE COUNTY—T 26n, R 7e, Sec. 13, Wrightman's 1, sec nw, moving in machine; T 22n, R 8e, Sec. 8, Harry McGill's 1, swc se, show gas at 2335-49 ft, td 3128 ft dry and abn.

LINCOLN COUNTY—T 16n, R 4e, Sec. 16, J. V. Bailey et al's House 1, c ne se, drlg 3900 ft; T 16n, R 5e, Sec. 2, L. G. Wheeler Mote et al's Wolfe 1, nwc ne sw, 6-inch at 3590 ft, co; T 16n, R 6e, Sec. 19, Flynn & Morgan's Finely 1, swc, drlg 915 ft; T 12n, R 3e, Sec. 29, Phillips' Robertson 1, sec nw, rig.

McINTOSH COUNTY—T 12n, R 18e, Sec. 15, A. B. Wolfe et al's Beck 1, nwc se, spudded and sd.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al's McDuff 1, swc nw se, Wilcox 5443-73 ft, small show oil 5446-70 ft, 1 m gas 5464 ft and 5480 ft, drlg.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion Oil Co.'s Sanders 1, nwc ne sw, sd 1800 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone O. & G. Co.'s Murry 1, swc, 1¼m gas at 2518-30 ft, 6-inch at 3520 ft.

OKLAHOMA COUNTY—T 12n, R 2w, Sec. 30, Magnolia's Noble 1, nwc sw sw, drlg 3975 ft; T 12n, R 3w, Sec. 15, Cromwell's Thompson 1, swc ne ne, fsg 7182 ft, sd.

OKFUSKEE COUNTY—T 11n, R 7e, Sec. 21, Slick's Wolfe 1, sec ne se, ur6-inch at 4458 ft, 4611 ft cemtd.

CLEVELAND COUNTY—T 10n, R 2w, Sec. 8, Slick & Phillips' Sudik 1, c ne ne, 5581 ft moving in rotary.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 16, McCulloch et al's Hollis 1, sec nw, show oil 4300 ft, td 4304 ft, bailing; T 10n, R 7e, Sec. 5, Marland et al's Strothers 1, nec se ne, ts 4884-4916 ft, top 2nd sand 4925-42, hfw, pb 24 4610 ft shot 60 qts Nosho, sd; T 8n, R 8e, Sec. 4, McCulloch's McGilbray 1, swc ne, drlg 4925 ft.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 15, Sooner Oil Co.'s Vandeveer 1, nec nw sw, sd 3120 ft.

POTTAWATOMIE COUNTY—T 6n, R 4e, Sec. 19, Simms Pet. Co.'s Lester 1, sec ne ne, sand 3650 ft, td 3698 ft flow 3030 bbls 41 gravity.

SEMINOLE COUNTY—T 6n, R 5e, Sec. 11, McCulloch's Powell 1, nwc, urr sd; T 6n, R 7e, Sec. 34, Magnolia's Harjo 1, nec se, drlg 3547 ft.

PONTOTOC COUNTY—T 5n, R 4e, Sec. 36, Denver P. & R. Corp.'s Roberts 1, sec ne ne, Wilcox 2838 ft, td 2853 ft, hfw pb to 2816 ft.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney's Huddleston 1, sec sw, ur 5-in. 3660 ft.

PONTOTOC COUNTY—T 4n, R 8e, Sec. 23, Independent's Hampton 1, nec, ur 10-inch 2359 ft, hfw.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key's Tall 1, c nw nw, fsg 1805 ft.

COAL COUNTY—T 2n, R 8e, Sec. 6, J. S. Cosden's Richardson 1, nwc ne ne, drlg 1480 ft; T 1n, R 9e, Sec. 24, Galbreath et al's Jones 1, swc se, fshg 3350 ft; T 1n, R 11e, Sec. 10, I. T. I. O.'s Cook 1a, sec sw nw, drlg 7015 ft.

CUSTER COUNTY—T 14n, R 14w, Sec. 1, W. E. Witt's Wellmon 1, c se, sd 100 ft.

ROGER MILLS COUNTY—T11n, R 26w, Sec. 4, L. C. Hivick's Davis 1, c nw ne, sd 700 ft, fsg 1535 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey's Robinson 1, c ne nw, spudded and sd.

BECKHAM COUNTY—T 8n, R 25w, Sec. 30, Benedum & Trees Oil Co.'s Rogers 1, swc, drlg 1300 ft; T 8n, R 22w, Sec. 20, Carson et al's Denby 1, swc se ne, fsg 1410 ft; T 8n, R 21w, Sec. 20, Carson et al's Denby 1, swc se ne, fsg 1410 ft; T 8n, R 21w, Sec. 33, Day Oil Co.'s Ault 1, c nw nw, sd 150 ft.

KIOWA COUNTY—T 7n, R 17w, Sec. 34, G. B. Cloyes' Brazil 1, swc ne, sd 1425 ft, co 2192 ft 1¼m gas.

GRADY COUNTY—T 4n, R 5w, Sec. 28, Wichoma Oil Corp.'s Morrison 1, nec, location abn.

JACKSON COUNTY—T 1n, R 20w, Sec. 4, Houseman et al's Northington 1, nec, sd 2020 ft.

KIOWA COUNTY—T 1n, R 17w, Sec. 18, Allen Bros.' Howell 1, nwc se, drlg 705 ft, has had several very small shallow flows of oil.

COTTON COUNTY—T 1s, R 11w, Sec. 34, Shasta Oil Co.'s Indian 1, nec, td 2606 abn; T 2s, R 12w, Sec. 31, Pearce & Brown's Heitzler 1, nwc, sd 2716 ft; T 3s, R 12w, Sec. 11, Consolidated Oil Co.'s Indian 1, nec sw, drlg 2005 ft; T 3s, R 10w, Sec. 11, E. J. Stump's Jones 1, nwc ne, sd 2513 ft.

STEPHENS COUNTY—T 3s, R 9w, Sec. 22, Pelwin Oil Co.'s King 1, swc se, sd 520 ft.

COTTON COUNTY—T 4s, R 9w, Sec. 31, Amerada's Delana 1, sec nw nw, fsg 1535 ft.

JEFFERSON COUNTY—T 5s, R 7w, Sec. 35, Amerada et al's Major 1, sec nw nw, location.

McLAIN COUNTY—T 5n, R 2e, Sec. 31, Tidal et al's Haberson 1, c se se, drlg 3920 ft; T 5n, R 3e, Sec. 22, Mid Continent Pet. Corp.'s James 1, sec, Wilcox 3291-3308 ft, td 3492 ft dry and abn.

GARVIN COUNTY—T 3n, R 3w, Sec. 36, Gilcrease-Douglas Oil Co.'s Barnett 1, sec nw ne, drlg 3400 ft.

MURRAY COUNTY—T 1n, R 2e, Sec. 17, Revels & McGee's Wolfe 1, nwc, co 2192 ft ¼m gas.

JOHNSTON COUNTY—T 1s, R 7e, Sec. 29, Smith-Kinsley's Lane 1, sec nw, drlg 1690 ft.

CARTER COUNTY—T 4s, R 2e, Sec. 32, Tex-Okla. Drlg. Co.'s Aenderson 1, sec ne se, sd 420 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. G. Endicott et al's Craig 1, c nw ne, drlg 1390 ft.

SOUTHERN CALIFORNIA

CALABASAS—Pugh-Miller Drilling Co.'s Colyear 1, dr hard sand 2626 ft.

CHATSWORTH—Russell Pet. Co.'s Joupin 1, 23-3-17, dr sand and shale 1610 ft.

FULLERTON—Shell's Stern 1, running 4¼-in. cas to test, td 6910 ft; Bastanchury 1, 28-3-10, new lcn.

HAWTHORNE—Standard's Freeman 1, 5-3-14, dr shale 2278 ft.

HUNTINGTON BEACH—Featherstone and Preston's 1, dr brown shale 3740 ft.

INGLEWOOD-POTRERO—California-Eastern's Pollard 1, plugged to 4100 ft, sd. Midland Oil Co.'s 1, rig. Petroleum Securities' Parent 1, new lcn. Max Pray's 1, dr shale 3380 ft.

NEWPORT - HUNTINGTON — Mesa Pet. Corp.'s B. A. 1, dr hard sand 4050 ft. Western Drilling and Producing Co.'s 1, 18-6-10, sd 2260 ft.

PIRU—Coastline Oil Co.'s Mazie 1, 21-5-17, dr shale 450 ft. Pico Dome Drilling Co.'s Piru 1, 14-3-16, dr shale 265 ft.

POMONA—Pomona Oil Ass'n.'s 1, 32-1-18, dr hard sand 1066 ft.

PUENTE—Richfield's Didier 1, dr shale 4482 ft. R. C. Rucker's Grazide 1, 27-2-10, rigging rotary.

REDONDO—Allied Pet. Corp.'s Lincoln 1, 28-3-14, dr shale 2300 ft. Petroleum Securities' S-1, 32-3-14, dr brown shale 4416 ft.

RICHFIELD—Western Drilling and Producing Co.'s Day 1, 21-3-9, dr hard sand 2633 ft.

ROSECRANS—Burlingame Pet. Corp.'s Hamm 1, dr gray sand 1030 ft.

TELEGRAPH CANYON—Union's Rimpau 1, 13-3-9, rig completed.

VENICE—Ohio Oil Co.'s Del Rey 1, 22-2-15, dr shale 3950 ft.

WHITTIER—R. W. Jackson's Flory 1, 19-2-11, changing to rotary, td 725 ft.

RIVERSIDE COUNTY—Hemet Pet. Co.'s Ward 1, 9-5-1, trying for water shutoff, td 3230 ft. Trabuco Oil Co.'s 1, 28-4-6, dr gray sand 3740 ft.

IMPERIAL COUNTY—Imperial Valley Pet. Co.'s 1, 32-11-10, dr sandy shale 2810 ft.

SAN BERNARDINO COUNTY—Mahla Oil & Gas Co.'s 1, 13-3-8, fsg for 6¼-in. cas 4000 ft. Western Pacific Oil Co.'s 3, 4-10-4, running liner to test, td 3365 ft. S. S. Turner's Baler 1, dr blue sand 1843 ft.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
KERN COUNTY—		
Day Oil Co.'s 1, 1-27-18.....	*	600

KERN COUNTY

BENA—Elmer Oil Co.'s 1, 15-30-30, dr gray sand 1728 ft.

BUTTONWILLOW—Richfield's Redding 1, 36-27-23, dr sandy shale 4856 ft.

GOULD HILLS—Elmer Oil Co.'s 1, 2-29-20, dr gray sand 1950 ft.

KERN RIVER—Richfield's Boston 1, 20-28-28, dr shale 3575 ft. F. M. Sayre's 1, 8-28-28, dr shale 2862 ft.

LERDO—Shell's An-1, 5-29-27, dr hard sand 1390 ft.

McFARLAND—General Petroleum's KCL-1, 25-26-25, 16-in. cas cmt 815 ft.

McKITTRICK—Ohio Oil Co.'s Wisecarver 1, 9-31-22, dr shale 666 ft. Texas Co.'s Aldridge 1, 4-30-22, co to test, td 6010 ft. Ventura- Pacific Oil Co.'s 1, 18-29-22, perforating cas to test, td 3375 ft.

ROSEDALE—Elmer Oil Co.'s 1, 33-29-26, fsg for collar 2485 ft.

SHALE HILLS—Day Oil Co.'s 1-A, 1-27-18, dr shale and shell 222 ft. William Gilbert's 1, 35-26-18, deepening from 750 ft.

SAN EMIDIO—Union's KCL-2, 5-10-21, dr oil sand and shale 2780 ft.

SANTA BARBARA COUNTY

BUELL ACNYON—Union's Buell 1, lcn.

CARPENTERIA—Continental's Bailard Com. 1, rigging up.

GOLETA—F. G. Anderson's Langham 1, 11¾-in. cas cmt 3235 ft, td 3415 ft. Elwood Cons. Oil Co.'s Rekar 1, 8-4-29, 4¼-in. cas recmt 3300 ft. General Pet. Corp.'s More 1, 21-4-28, dr streaks limestone 1372 ft. Petroleum Securities' Bishop 1, lcn.

ORELLA—Shell's Rutherford 1, coring 3290 ft.

POINT CONCEPCION—Standard's Gerber 1, dr gray sand 2100 ft. Western Gulf's Hollister 1, rigging rotary.

SANTA BARBARA—Bankline Oil Co.'s 1, dr shale 4305 ft. Channel Oil & Dev. Co.'s 1, 29-4-27, dr shale 480 ft. Exeter Oil Co.'s Duncan 1, dr red shale 3418 ft. Padre Oil Co.'s Dos Pueblos , 8-4-29, dr shale 2525 ft.

SANTA MARIA—Shell's Union Sugar 1, 25-10-35, co 3035 ft; Union Sugar 2, 25-10-35, coring 1655 ft.

SUMMERLAND—American Oil Producers Submarine 1, dr shale 635 ft. George F. Getty's Becker 1, 22-4-26, dr shale 3310 ft. Shell's Ralph 1, 18-4-25, lcn.

TORTUGA CANYON—Standard's Schyvers 1, dr hard sand 2268 ft.

VENTURA COUNTY

FILLMORE—Federal Oil Co.'s Elkins 1, 5-3-19, pumping oil and water, td 3385 ft; Elkins 2, 5-3-19, lcn.

HUENEME—The Texas Co.'s Eastwood 1, dr hard sand 2130 ft.

LOCKWOOD—Lockwood Valley Oil Co.'s 1, 28-8-21, new lcn.

MUD CREEK—Superior's Kirtlan 1, 14-4-21, lcn.

PIRU—Bolsa Chica Oil Corp.'s Snow 1, fsg for bit, td 400 ft. Pacific Western Oil Co.'s Tehmescal 5, co 3600 ft.

RED MOUNTAIN—Miley Oil Co.'s Casitas 2-A, dr hard sand 1130 ft; Oakgrove 1, 11-3-24, lcn.

SANTA PAULA—San Pedro-Pt. Fermin Synd.'s Kellerman 1, sr 715 ft.

SATICOY—Standard's Citrus 5, dr hard sand 5820 ft.

SIMI—Shell's Marr 1, 31-3-17, coring 2842 ft.

VENTURA—California Oil Co.'s Lacrosse 1, dr 250 ft. Federal Oil Co.'s Sexton 1, dr heavy oil sand 985 ft.

MISCELLANEOUS

FRESNO COUNTY—KCL Oil Co.'s 1, 7-19-15, rig. Hornaday and Huggins' 1, 32-14-28, dr shale 3466 ft. Section 30 Oil Co.'s 1, 30-19-15, dr hard sand 450 ft.

KINGS COUNTY—Dudley Ridge Synd.'s 1, 12-23-19, co 1150 ft, td 1450 ft.

MERCED COUNTY—Applegate and Renshaw's 1, 24-6-10, dr gray sand 3677 ft. H. L. Kuhn's 3, 8-12-19, dr gray sand 375 ft.

MONTEREY COUNTY—Marland's Naciemento 1, 32-24-11, dr hard sand 3678 ft. Shell's Dudley 1, 15-22-9, coring 2140 ft. Union's Paige 1, 8-22-8, lcn.

SAN LUIS OBISPO COUNTY—North Star Oil Co.'s 1-A, 5-32-13, oil showings 3530 ft. Painted Hills Oil Co.'s 1, 34-20-10, dr brown shale 2000 ft. Panorama Oil Co.'s 1, 7-31-21, dr shale 3600 ft. T. H. Putman's 1, 12-32-22, sr 2250 ft, td 2605 ft. Texas Coal and Oil Co.'s Dutton 1, 25-32-1, re-drilling 250 ft. Union's Russ 1, re-dr 3300 ft; Chandler 1, 15-32-15, re-dr 3305 ft.

TULARE COUNTY—Big Four Oil Co.'s 1, 29-23-27, m on 4¼-in. cas 4330 ft.

FRICK-REID *at* MEXIA

J. J. CAVE
—at the service of every Oil Man in the Mexia area.

A wildcat test on the Rodgers farm three miles west of Mexia, Limestone County, opened the first production of Mexia field November 20, 1920. Pay was topped at 3064 feet in Woodbine sand, and represented the first oil pay from this formation. Gravity of crude in the discovery well tested 36.9 degrees Baume.

The discovery well flowed irregularly by heads following the strike, and sanded up, apparently a freak producer. Following a re-working of the hole successful completion was made for 2,000 barrels. Rapid development followed the discovery but, due to lack of knowledge at that time of fault conditions, the field peak was not attained until 1922, when Mexia yielded 35,120,000 barrels. Production in 1928 was 2,942,000 barrels, bringing the field's total output at the close of that year to 97,972,000 barrels.

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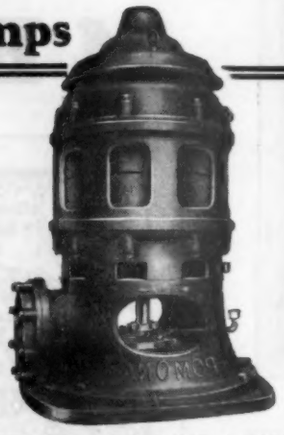

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5,000′— 8¼″ Casing	20,000′—4″ Line Pipe
5,000′—10″ Casing	15,000′—6″ Line Pipe
1,000′—12½″ Casing	5,000′—8″ Line Pipe
1,000′—15½″ Casing	

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MOUNTAIN STATES

MONTANA

BROADWATER—Swoboda et al's 1, 36-7n-2e, dr 625 ft. New Day Oil Co., nw 29-5n-1e, dr 850 ft. Conrad McDonald, nw 7-8n-1e, skdg to new location.

BLAINE—Ohio Oil Co.'s Winngert 1, 3-34n-32e, sd engine repairs, td 3260 ft.

CARBON—Ohio Oil Co.'s Northern Pacific 2, 11-7s-21e, rig up.

CASCADE—U. S. Pete. Co.'s Miller 1, 8-21-4w, dr 958 ft. Lone Star's McLean 1, 13-21n-3e, dr 788 ft. Rothrock & Reynolds' McIver 1, se 12-20n-2e, dr 200 ft. Eden Oil Co., sw 27-18-4e., dr 830 ft.

CHOTEAU—Geraldine O. & G. Co., ne 1-21-11e, dr 1735 ft. Williston-Shelby O. & G. Co.'s 1, 12-28-11efi sd 2765 ft.

CUSTER—Montana Belle Oil Co.'s Loesch 1, 28-8n-45e, wait cas 2546 ft.

GALLATIN—California Co.'s Ringling 1, 35-5n-7e, run cas, td 974 ft.

JUDITH BASIN—Gem Oil Co., 15-16-10e, rig up.

LIBERTY—Sunburst O. & R. Co.'s Bear's Den 1, nw 17-36-6e, dr 1800 ft. Square Deal Pete. Co.'s Johnson 1, se 1-32-7e, ur 6¼-in., td 3230 ft. Mid-Rocky Dev. Co.'s Federal Lands 1, 7-35-7e, sd 1500 ft. Western Nat'l Gas Co.'s Morrison 1, 5-37-4e, dr 550 ft. Cypress Oil Co.'s State 1, 36-28-6e, temp sd 1900 ft, await equipment.

PONDERA—Trapp Synd.'s Hover 1, 35-28-3w, will prob. abdn, fsg 2220 ft. Miller Bros.'s Bruins 1, nw 17-28-1w, rig up.

STILLWATER—J. S. Stewart, 5-2n-22e, show consid gas at 2300 ft.

SWEETGRASS—Shoeshone Consolidated's 1, 23-2n-15e, dr 4060 ft, report 300 ft oil in hole.

TETON—Texas Pacific's Halcro 1, 12-22-1w, ur 1175 ft. Ohio Oil Co.'s Coghill 1, 32-26-2w, rig.

TOOLE—Sunburst O. & G. Co.'s Sunburst 1, nw 10-34-3e, rig up. Monata Oil Co., Ltd.'s Buckley 1, se 1-37-4w, dr 500 ft. B. & B. Oil Co.'s Dunkirk 1, nw 20-31-1e, will resume, td 600 ft.

NEW MEXICO

CHAVES—Snowden & McSweeney's Merchant 1, ne 27-15s-23e, dr out cem 4260 ft. R. T. Neal et al's Russell 1, 31-14-25e, fsg 1385 ft. Warman et al's 1, sw 23-13s-24e, sd. Tannehill et al's Butler 1, se 15-21s-24e, dr 950 ft. Transcontinental's Robert 1, 1-14s-28e, dr 2365 ft.

DE BACA—Matador Oil Co.'s State 1, sw 6-4n-20e, dr 641 ft. Pittsburg Oil Co.'s 1, ne 16-1s-27e, dr 4355 ft. Transcontinental's McWhorter 1 ,6-35-22e, dr 3800 ft, oil showing.

GUADALUPE—Hanchett Oil Co.'s 2, 14-8n-24e, bit lost at 2400 ft, may skid.

LEA—Midwest's Greagory 22, sw 31-25s-37e, dr 400 ft; Capps 31, sw 3-19s-39e, dr 1220 ft; Farnsworth 19, 12-26-37e, sd 4115 ft. Gypsy Oil Co.'s Mattern 1, 24-21s-36e, wtg for parts. Exploration Co.'s Record 1, 26-19s-35e, td 4556 ft. Morton et al's State 1, ne 32-11s-38e, dr 1878 ft. Texas' Sheppard 1, ne 6-26s-37e, spray oil 3230 ft, tools lost. Curtis Dr. Co.'s Nixon 1, 22-18s-34e, sd 1200 ft. Empire Gas & Fuel Co.'s State 28, 8-21s-35e, rig up; Closson 1, se 6-22s-36e, ready to spud. Texas-Pacific Coal & Oil Co.'s State 1, sw 22-23s-35e, dr 3500 ft. Henderson et al's McDonald 1, se 18-20s-34e, dr 3115 ft. Vacuum Oil Co.'s 1, 14-17-34, dr 3365 ft. Bordages et al's Hughes 1, 27-19s-38e, prep to resume 4012 ft. Pueblo Oil Co.'s Scott 1, se 29-25s-37e, dr 2662 ft. Rector Oil Co.'s King 1, sw 27-25s-32e, operation susp. Maljamar Oil & Gas Corp.'s Simon 1, ne 29-17s-32e, bldg road to location. Ohio Oil Co.'s State 1, sw 9-19s-38e, ready to spud.

McKINLEY—J. W. Halsell's Santa Fe 1, 17-18n-9w, carry 10-in. at 1070 ft. San Juan Coal & Oil Co.'s 1, se 27-18n-9w, dr 1100 ft.

ROOSEVELT—J. T. Keegan et al's Pepper 1, 6-1s-36e, ready to spud. Smith & Sloan's Lovern 1, se 4-3s-35, dr 915 ft.

RIO ARRIBA—Berringer et al's Hartman 1, ne 8-29n-7w, co 520 ft.

SAN JUAN—Continental Oil Co.'s Munoz 17, 2-29-19, ur 4¾-in. below 6730 ft. Dorothy Oil Co., 29-30-9, mvg in new equipment, 712 ft. Kutz Canon O. & G. Co.'s Day 1, 29-28-11, stand 722 ft. Blackrock Oil Co.'s 1, sw 11-25s-13w, to resume soon under new contract. Iowa Oil Synd.'s Viles 2, 28-29-11, sd 694 ft. Angel Peak Oil Co.'s Kutz Canon 1, 11-28n-11w, wtg for dr line 3000 ft. Great Mesa Oil Corp.'s Rocerick 1, sw 11-11n-14w, co 215 ft. Milwaukee-N. M. Synd.'s Beardsley 1, 30-28-11w, ur

10-in. 1700 ft. Childers D. & P. Co.'s Westwater 2, nw 24-31-18w, dr 2310 ft.

SAN MIGUEL—Benedict-Wilson's 1, ne 25-17n-16e, sd 800 ft. Pioneer O. & G. Co.'s Thunderbird 1, nw 14-15n-16e, dr 1838 ft. Starr Oil Co.'s Adams 1, ne 25-17n-16e, dr 660 ft.

SOCORRO—Arnold et al's 2, ne 13-6s-1w, fsg 1715 ft.

TORRANCE—Bluhall O. & G. Co., 20-6n-10e, dr 1780 ft. Hall et al's Pinos Wells 1, sw 25-3n-13e, stand 400 ft. Sinnock et al's Kutchin 1, ne 13-7n-7e, dr 117 ft.

VALENCIA—Rio Puerco Oil Co.'s N. M.-Ariz. Land Co. 2, nw 13-6n-2w, wait pipe 3145 ft. Acme Oil Co.'s N. M.-Ariz. Land Co. 1, 26-6n-3w, dr up cas shoe.

COLORADO

ARCHULETA—Juanita Oil Co.'s Harvey 1, sw 4-32n-3w, stand 735 ft, bad roads.

BENT—Marland Oil Co.'s Pipe Springs 1, se 27-29s-49w, sd 3987 ft.

ELBERT—Progressive O. & L. Co.'s Pease 1, sw 27-10s-60w, spd 70 ft.

JEFFERSON—Ruby Hill O. & G.'s Braden 1, se 14-4s-69w, dr 1740 ft.

LAS ANIMAS—Parker-Club-Kinney-Coastal, 4-28s-68w, cas 3008 ft. Okla.-Colo. O. & G. Co.'s Doherty 1, sw 32-34-60w, dr 1017 ft, much water in hole.

LARIMER—Barrows et al., 7-11s-68w, sd 2000 ft.

LAPLATA—Royal P. & R.'s Red Mesa 1, 27-33n-12w, sd 650 ft.

LINCOLN—Kelly Oil Co.'s State 1, ne 36-14s-57w, stand 1600 ft.

MESA—Peerless Oil Co.'s Hoel 1, ne 23-8s-104, dr 2410 ft. Parrish & Langston D. & R. G.'s Western 1, nw 23-1s-1w, sd 417 ft.

MOFFAT—Mtn. Fuel Supply Co.'s State 1, 16-12-100, fsg 3585 ft, td 3600 ft. McLaughlin et al's Wms 1, 2-3n-91w, dr 3310 ft. McCormick et al's Sales 1A, se 28-4n-92w, spd 15 ft and sd.

MONTROSE—Uncompaghre O. & G. Co.'s Colorado Title & Trust 1, 27-50n-10w, dr 2000 ft.

PUEBLO—Rozella Oil Co.'s Shaw 1, nw 3-22s-63w, abd 1190 ft. Christopher Oil Synd.'s Stanbeck 1, nw 19-22s-63w, stand 1070 ft. Christy-Frantz Corp.'s Mannerich 1, sw 34-21s-63w, sd 1130 ft. Sheffer et al's 1, se 4-22s-63w, wtg cas 1150 ft. Security Oil Trust's Buch 1, nw 14-22s-63w, sd 615 ft. G. E. Stevenson et al's Isis 1, ne 1-23-63, susp 620 ft. Sundance Oil Co.'s Lubers-Oliver 1, 35-21s-63w, will skid rig. Amarillo Prod. Co.'s Phal 1, nw 35-22s-63w, dr 800 ft.

RIO BLANCO—White Eagle O. & R. Co.'s Fordham 1, sw 9-2s-86w, skd rig.

YUMA—Major Pete., Inc.'s Black Wold 1A, sw 7-2s-43r, ready to spud.

WELD—Platte Valley Pete. Corp.'s Patterson 1, sw 25-8n-61w, 6¼ in- cemt, td 4180 ft.

WYOMING

BIG HORN—P. & R.'s 3, 24-56-98, rigg rotary, td 2775 ft; South Frannie 1, 7-57-97, sd repairs, 1950 ft. Cody Pete's 1, sw 27-57n-96w, sd 1415 ft. Ohio Oil Co.'s Pulley 2, 27-52-101, rig up. Cross Gas Co.'s 1, 23-56-97, water in sundance at 4020 ft. Forsman Bros., 17-57-101, ssg 2000 ft.

CARBON—P. & R., 2-19-88, sd 4003 ft.

CONVERSE—Criterion Oil Co., ne 5-31-70, ready to resume 3600 ft.

FREMONT—P. & R.'s Muskrat 2, nw 1-33n-92w, location. Kinney-Coastal, 22-3n-1w, ur to 2150 ft.

HOT SPRINGS—Texas Prod. Co., sw 23-45n 100w, string 13⅜-in. to 1960 ft. MacPherson Oil Co., sw 2-44n-98w, set 5 3/16-in. and dr ahead 3317 ft.

LINCOLN—Midwest Ref. Co.'s Waterfall 1, 35-22-115, dr 2810 ft. O. M. Topley, Sage structure, prep to resume at 450 ft.

PARK—Calif. Expl. Co. and P. & R.'s Pitchfork 1, 12-48n-102w, cem 20-in. at 225 ft. Midwest's Rosenburg 36, 25-58-98, co and ur 2063 ft; Kirk 36, se 23-56n-98w, dr 2610 ft. Cody Pete. Co.'s 1, ne 4-54n-102w, dr 3510 ft; 1, 16-53-101, bldg rig. Oregon-Wyoming Oil Co., 31-51-101w, spd. Grebo Royalties, 2-47n-100w, sd 1700 ft. Resolute Oil Co., nw 17-57-101, fsg 2215 ft. Henderson Prod. Co., 31-58-99, try mud off gas.

SWEETWATER—Mtn. Fuel Supply Co.'s Tucker 1, 18-13-99, sd 2480 ft; Humphreys 1, 2-12-101, dr 3600 ft; Otto Arnold 1, 24-19-104, dr 1250 ft. P. & R.'s 1, 26-20-104, circulating to kill gas, 6¼-in. set at 3500 ft. Vermillion Oil Co., sw 16-12-99, ready to resume at 620 ft.

SUBLETTE—California Co.'s Wyss 1, 12-32n-115w, sd 1608 ft. California Co.'s Buchell 1, 11-29-115w, sd 2503 ft.

UNITA—California Co.'s U. P. 1, 7-17-119w, run cas., td 3036 ft. H. Allen Rispin's LeRoy 1, 5-16-117w, prep to resume.

WESTON—Continental Oil Co.'s 1, 11-45-64, will deepen from 1000 ft. California-Wyo. Drill Synd., 15-44n-64w, ready to resumt at 4300 ft.

TEXAS GULF COAST

Completions

COLORADO COUNTY—		
Humble, Binkley 1, Altair	*	2115
FAYETTE COUNTY—		
Phalen et al, Cervanca 1, 6 mi s La Grange	*	3880
GOLIAD COUNTY—		
Booth & McCarson, Murry 1, Goliad Townsite	*	1465

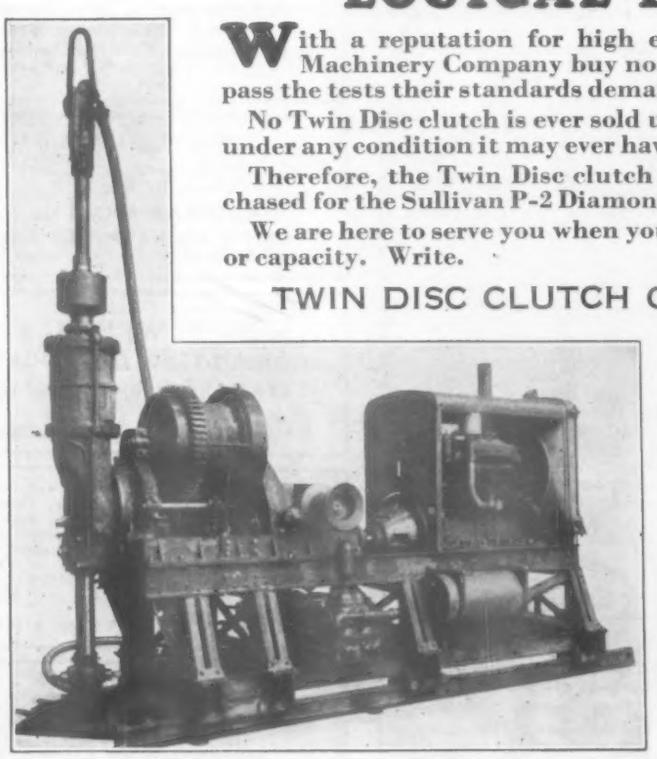
AUSTIN COUNTY—Raccoon Bend: Humble O. & R. Co. and Valley Oil Corporation's Snell 1, lcn; Sarah Heimuth 1, dr 894 ft shale; Washington B-1, dr 1145 ft shale; Ollie Wilson 2, dr 1795 ft shale; Mueller 1, dr 2455 ft sandy shale; R. Dietrich 2, comp for 882 bbls daily at 3317 ft; Kalesiewski B-1, r 1004 ft; Hardy 4, ru; Buchanan 1, dr 3435 ft sandy shale; Washington A-2, dr 3046 ft sandy shale; Urban 2, ru; R. Thompson 3, waiting on cement to set, 3289 ft; Sanders 2, set cas at 3186 ft; E. Grawunder D-1, dr 3320 ft shale and shell. F. & M. Drilling Co.'s Mewis 1, w of Raccoon Bend, dr 3000 ft sand.

BRAZORIA COUNTY—Meyer et al's Davidson 3, Clemens Dome, dr 920 ft shale and lime. Humphreys Corp.'s Bryan 1, Bryan Heights, sdtr 2430 ft. Empire's Brock 3, Stratton Ridge, dr 625 ft gbo.

CALHOUN COUNTY—Baker & Thompson's Thomas 1, 10 mi w Pt. Lavaca, dr 2730 ft.

CHAMBERS COUNTY—Pure's Mayes 2, Lost Lake, dr 912 ft rock; Mayes 3, Lost Lake, dr 50 ft clay. Barbers Hill: Mills-Bennett Prod. Co.'s Smith 2, set cas at 5120 ft; E. W.

LOGICAL EQUIPMENT



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Boston (25), Mass.—Standard Auto Gear Co., 531 Columbia Road.
Buffalo, N. Y.—Edward W. Rode, 45 A. St.
Cleveland—Ohio Engine Parts and Service Co., 1053 E. 61st St.
Chicago—Motive Parts Co. of America, Inc., 2419 Indiana Ave.
Des Moines—Motive Parts Co. of America, Inc., 1204 W. Grand Ave.
Detroit—Whitney Brothers, 6464 Epworth Blvd.
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Barber 1, dr 4320 ft hard sand. Gulf's Fisher Fee 1, dr 5450 ft shale and lime. Humphreys Corp.'s Kirby B-6, abn at 5809 ft; Tarbutton 1, dr 3600 ft gbo; Kirby A-7, dr 2960 ft rock. Sun's Chambers Co. Agri. Ass'n 1, dr 5450 ft shale and lime. Carpenter & Eunice's Feldman 1, dr 4945 ft hard lime. Tolbert et al's Ilfrey 1, dr 4820 ft shale and lime.

COLORADO COUNTY—The Texas Co.'s Kinkler 1, Cat Springs, dr 1348 ft. Humble's Binkley 1, Altair, abn at 2115 ft. Merrett et al's Zverck 1, 2 mi e Ellinger, sd 320 ft.

FALLS COUNTY—Humble's Piper 1, dr 1483 ft lime.

FAYETTE COUNTY—Phalen et al's Cervanca 1, 6 mi La Grange, abn 3880 ft. Moore et al's Kerr 1, Muldoon, sd 2078 ft. National Oil Co.'s Melcher 1, Plum, dr 3250 ft shale.

FORT BEND COUNTY—Sun Oil Co.'s E. C. Farmer 6, Boling, dr 1720 ft shale; E. C. Farmer 7, Boling, lcn; H. R. Farmer 4, Boling, drk. The Texas Co.'s Pleasants 1, Boling, dr 3822 ft sand and shale. Gulf's Trone 11, Long Point, abn 1075 ft; Wolfe 15, Long Point, lcn. Boling Dome Oil Corp.'s Armstrong 1, Boling, abn 5200 ft. Sugarland: Humble's Brazos Farm 6, fsg 1563 ft; Deatherage B-1, dr 880 ft sand; Hamner Fee 1, moving in; Hamner Fee 2, ru; Hamner Fee 3, lcn; Hamner Fee 4, dr 640 ft gbo; Brazos Farms 5, comp for 1200 bbls at 3598 ft; Sugarland Industries 7, dr 3141 ft shale and lime; Nelson 2, complete for 1200 bbls at 3672 ft; Camp 3, dr 3483 ft shale; Camp 4, drk. South Texas Exp. Co.'s Hartfield 1, Needville.

GALVESTON COUNTY—Long et al's Irvin & Bishop 1, 2 mi Dickinson, sd 4322 ft. Republic Prod. Co.'s Lobit 1, 1 mi nw Dickinson.

GOLIAD COUNTY—Booth & McCarson's Murry 1, Goliad townsite, abn at 1465 ft.

HARDIN COUNTY—Gulf Coastal Oil Co.'s Nona Mills 1, 5 mi e Saratoga, dr 1725 shale. Guedry Drlg Co.'s Guedry 1, 3 mi s Batson, drk. West Prod. Co.'s Baker 1, 5 mi e Saratoga, oil show 4270 ft.

HARRIS COUNTY—Humble's Simms-Smith 75, Goose Creek, set cas at 4270 ft; Warren 5, Hockley, dr 4136 ft shale and lime; Williams 1, Humble, set cas 3938 ft; Irwin 1, Mykawa, 2504 ft. Paxton et al's Brubacker 1, 1 mi ne Clodine, sd 1125 ft. Paxton & Pundt's Brown 1, dr 1300 ft shale. South Texas Pet. Co.'s Morris 4, Humble, dr 2274 ft gbo. Little York Oil Co.'s Davis 1, Little York, sd 3100 ft. The Texas Co.'s Stevenson 39, Humble, flowed 10,043 bbls 43.2 gravity oil initial April 25 at 5248 ft.

JACKSON COUNTY—The Texas Co.'s Moore 1, Edna, dr 3869 ft. Wright Bros'. Drushell 8, Edna, drk; Classen 2, Edna, sd 3945 ft.

JEFFERSON COUNTY—Deep Test Oil Corp.'s McFaddin 1, 6000 ft e Spindletop, sd 3500 ft. J. W. Farhar et al's Rohwedder 1, 5 mi ne Beaumont, dr 2965 ft gbo. Beaumont Oil Co.'s Tyrrell 1, 2 mi w Brooks, drk. River Oil Co.'s Ship Channel Ld. Co., 1, 2 mi se Beaumont, sd 1320 ft. Bleakie Oil Co.'s Tollivar 1, 2½ mi nw Voth, sd 1750 ft. The Texas Co.'s Pipkin 1, Big Hill, set 6⅝ at 4720 ft. Gulf's Thomas 11, Fannett, dr 4685 ft lime; Bordages A-7, Fannett, dr 5000 ft. Yount-Lee Oil Co.'s Nona Mills 1, 5 mi s Beaumont, dr 5865 ft sand. Shell's Heisig 1, 2 mi n Hampshire, dr 1465 ft.

LAVACA COUNTY—The Texas Co.'s Russek 1, 6 mi s Ezell.

LIBERTY COUNTY—Barlow et al's Hinchcliff 1, 2½ mi ne Cleveland, sd 2215 ft. Kouri et al's Campbell 1, 6 mi s Cleveland, sd 2000 ft. Big Dome Interests' Finley 2, 3 mi nw Hardin, drk. The Texas Co.'s Davis 2, Davis Hill, dr 4092 ft hard sand; Pickett 3, n end S. Liberty, dr 4800 ft sand and shale; Green 5, n end S. Liberty, dr 3175 ft. Humble's Sterling 4, Moss Bluff, dr 3334 ft anhydrite. Union Explo. Co.'s Esperson 2, 2 mi s Sheeks, tested salt water, will deepen from 5567 ft. Tan Bay Oil Co.'s Christian 1, 10 mi n Hardin, sd 1115 ft. Re-

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public Prod. Co.'s Mysilvec 1, 2 mi s Hardin, dr 1720 ft gbo.

MATAGORDA COUNTY—Crossland et al's Hawkins 1, Shepherds Mott, dr 4775 ft shale. Rycade-Humble's Kuntze A-6, Markham, will bail, 3795 ft. Dr. P. S. Griffith's Culver 1, e Citrus Grove, sd 3215 ft; Baer 1, 1½ mi n Gulf Hill, sd 2120 ft. West Prod. Co.'s Meyers 1, Markham, dr 3520 ft gbo.

ORANGE COUNTY—Veteran Oil Co.'s Reed 1, 2 mi se Orange field, dr 3175 ft gbo. The Texas Co.'s Kuhn 1, 4 mi e Spindle Top, dr 3160 ft sand and shale.

REFUGIO COUNTY—Blanco Oil Co.'s St. John 1, 3 mi nw Refugio, 2720 ft gbo. Magnolia's Glenewinkle 1, nw of Refugio prod. Houston Gulf Gas Co.'s Lambert 8, dr 3578 ft sandy shale; Rose Lambert 2, completed for 75 million ft gas; O'Brien 4, dr 3871 ft sandy shale; Rogers 3, dr 4120 ft; Rooke 2, set surface cas; Shelly 7, dr 3543 ft sand; Holmes Heard 4, Refugio, dr 1350 ft. Saxet Oil Co.'s Clint Heard 7, rebuilding wrecked, drk. Oigufer Oil Co.'s Shelly-Ryals No. 1, completed for 250 bbls oil at 3683 ft.

WALLER COUNTY—Dixie O. & G. Co.'s Brazos River State 1, San Felipe, sd 500 ft. The Texas Co.'s Young 1, 3 mi e Raccoon Bend, dr 2708 ft lime rock.

WASHINGTOIN COUNTY—Sun Oil Co.'s Schlottman 1, Clay Creek, dr 2525 ft sand; Mrs. J. Grote 2, dr 2735 ft; G. F. Grote 4, drk; G. F. Grote 7, drk; Schirmer 2, dr 2675 ft sandy shale. Davis et al's Seward 1, ½ mi n Independence, abn 2510 ft. Thomas et al's Giddings 1, 4 mi e Brenham, dr 350 ft. W. D. Anderson's Rubenstein 1, 4 mi se Gay Hill, sd 340 ft.

WHARTON COUNTY—Hearte Oil Co.'s Brown 1, 3 mi s El Campo, sd 2243 ft.

SOUTH LOUISIANA

ASCENSION PARISH — Gulf's United Lands Co. 14, Sorrento, dr 1300 ft; Belle Helene Sugar Co. 1, Darrow, dr 4450 ft. Triumph Oil Corp.'s Lacey 2, 3 mi se Sorrento townsite, depth 2100 ft. Big Dome Drlg. & Dev. Co.'s & J. S. Kimbrough's Rearwood 1, Darrow, sd 3005 ft. Baton Rouge Pet. Co.'s Liotta h, sd 1000 ft.

CALCASIEU PARISH — The Texas Co.'s Moss 1, Sec. 8-10s-9w, drk. J. O. Davis' Mimms 1, Lake Charles, dr 950 ft.

CAMERON PARISH—Pure Oil Co.'s Yount-Lee 7, Sweet Lake, dr 5189 ft sand rock; Yount-Lee 8, Sweet Lake, will test oil sand at 5633 ft. The Texas Co.'s Calcasieu Lake A-3, S. Calcasieu Lake dome, ru. Rycade Oil Corp.-Humble's Gulf Land 1, Hackberry, abn at 4333 ft; Gulf Land 2, set 6⅝ at 3964 ft to test. Yount-Lee Oil Co.'s Kaough 3, Hackberry, lcn. Cameron Oil Co.-Rycade's Duhon 4, Hackberry, completed as 50 bbl pumper. Shell Pet. Corp.'s Watkins 6, Black Bayou, dr 4592 ft shale and lime; Watkins 8, complete das 30-bbl pumper at 981 ft; Watkins 10, bldg drk.

IBERIA PARISH—The Texas Co.'s Vermilion Bay A-3, dr 4625 ft. Gulf's State Z-9, Loreauville, lcn; Moresi Co. et al 1, Loreauville, dr 3450 ft.

IBERVILLE PARISH — Shell's Wilbert 3, White Castle, dr 4395 ft sandy shale. Standard of La.'s Wilbert 2, Bayou Blue, set surface cas; Wilbert 3, ru; Schwing 1, Bayou Blue, td 3780 ft; Schwing 2, Bayou Blue, ru; Schwing 3, Bayou Blue, completed canal.

PLAQUEMINE PARISH—Gulf's Morris & Rose 1, Spanish Pass, dk. The Texas Co.'s Garden Island Bay 1, 15 mi se Venice, ru.

POINTE COUPEE PARISH—Fruen et al's La Cour 1, sd.

ST. LANDRY PARISH—The Texas Co.'s Botney Bay Fee 2, Port Barre, lcn. Elbof Explorations, Inc.'s, Henry Smith 1, 3485 ft total depth.

ST. MARTIN PARISH—Rycade's State 3, Bayou Bouillon, dr 3235 ft; Bayou Bouillon Fee 7, cor 3255 ft, oil show. Ohio Oil Co.'s Martin et al 3, Hager dome, sd 4490 ft; Burke 3, dk. The Texas Co.'s St. Martin Land Co. 1, Hager dome, set surface cas; St. Martin Land Co. Fee 2, bldg rig.

ST. MARY PARISH—J. McMurrey et al's Le Blue 1, Charenton, sd 3100 ft.

TANGIPAHOA PARISH — Tanli Oil Co.'s Weinberger 2, sd 4050 ft. Joan Dev. Co.'s Lake Superior Piling Co. 1, dr 1930 ft.

TERREBONNE PARISH—The Texas Co.'s Lake Barre 1, dr 1610 ft; Lake Pelto B-1, bldg drk; Four Isle Bayou B-1, bldg drk; Timbalier Bay A-1, bldg drk; Bay Coon Road B-1, drk; Dog Lake Bayou A-1, set surface cas.

SOUTHWEST TEXAS

Company, Well and Location	Initial Production BBls.	Depth
CALDWELL COUNTY—		
Alexander-Smith, Cardwell 1, 4 mi n Lockhart	*	1725
Allen & Dixon, Callihan 1, S Lockhart	*	2350
GONZALES COUNTY—		
Indiana Pet. Corp., Karnstadt 1, Ottine area	*	4344
GUADALUPE COUNTY—		
Mid-Kansas, Yohman 1, 8 mi se Staples	*	1320

BASTROP COUNTY—Gypsy Prod. Co.'s Lottman 1, e Bastrop, sd 2150 ft. Livingston et al's McCall 1, 1 mi s Bastrop, dr 2280 ft shale. Owen et al's Goodman 1, 1½ mi Cedar Creek, dr 2000 ft chalk.

CALDWELL COUNTY—Anderson et al's Horner 1, 1 mi s Lockhart, 1400 ft. Alexander-Smith's Cardwell 1, 4 mi n Lockhart, abn at 1725 ft Ed lime; Carter 1, 2 mi se Lytton Springs, lcn. Allen & Dixon's Callihan 1, abn 2350 ft.

GONZALES COUNTY—Greene et al's Dix 1, sw part co., show gas 1200 ft. Linderman Bros'. Frampton 1, s mi n Waelder, sd 610 ft. Benedum Trees Oil Co.'s Lamkin 1, 1 mi n Ottine, chalk 4200 ft, t.c. 3990. Flynn et al's Wilhouser 1, 12 mi s Gonzales, sd 5212 ft. Empire G. & F. Co.'s Norwood 2, Ottine area, dr 3865 ft chalk. Indiana Pet. Corp.'s Karnstadt 1, Otine, abn 4344 gt sand. Joe Bruner's Miller 1, 1 mi n Waelder, r 2150 ft. Crown Pet. Co.'s Hattenbach 1, dr 1525 ft shale.

GUADALUPE COUNTY—Christie et al's Thomas 1, 12 mi ne Seguin, sd 1227 ft. Sights et al's Woehler 1, 4 mi e Seguin, cor lime 2405 ft. Miller Bros'. Springs 1, 5 mi s Seguin, dr 2550 ft lime. Mid-Kansas Lohman 1, 8, mi s Staples, abn 1320 ft lime. Magnolia's Whiley 1, 6 mi e Kingsbury, dr 3127 ft lime

JIM HOGG COUNTY—The Texas Co.'s Vela 2, dr 2241 ft.

MAVERICK COUNTY—Rycade Oil Corp.'s Chittim 3, 20 mi e Eagle Pass, dr 3530 ft; Chittim 4, 20 mi e Eagle Pass, dr 1280 ft chalk; Sullivan 4, 20 mi e Eagle Pass, dr 880 ft chalk.

STARR COUNTY—The Texas Co.'s Virginia Guerra 1, dr 2519 ft shale.

WEBB COUNTY—The Texas Co.'s Weeks-Wilder 2, set cas at 2602 ft.

WEST TEXAS

Company, Well and Location	Initial Production BBls.	Depth
CROCKETT COUNTY—		
J. D. Wheeler et al, State Fee 1	*	1719
GLASSCOCK COUNTY—		
Penn Oil Co. & Empire, Hughes 1	*	3500
IRION COUNTY—		
Signal Oil Co., Sugg 2	*	3005
MITCHELL COUNTY—		
H. H. Adams et al, Elwood 1	*	659
PECOS COUNTY—		
Spot Geyer et al, Smith 1	*	1605
REAGAN COUNTY—		
Oberholtzer et al, Talley 1	*	3012

ANDREWS COUNTY — Deep Rock Oil Co.'s Hostetter 1, elev 3224 ft, top salt 1890 ft, top lime 4100 ft, fsh 4483 ft. Mid-Continent Pet. Corp.'s Fisher 1, elev 3192 ft, dr 1210 ft.

BORDEN COUNTY—Gibson-Johnson et al's Higginbotham 1, elev 2432 ft, top salt 1135 ft, dr 2455 ft. Greene O&R Co.'s Slaughter 1, elev 2521 ft, top salt 1222 ft, dr anhydrite 2995 ft. C. E. Hyde et al's Beal 1, elev 2361 ft, top salt 1105 ft, top lime 2752 ft, trace oil, gas and water 3035-60 ft, dr 3135 ft. W. A. Moncrief et al's Munger 1, lcn. Teas & Wheeler's Long 1, lcn.

BREWSTER COUNTY—Ed. W. Bateman & Co.'s Neville 1, elev 3950 ft, dr up bailer, td 1955 ft. Brewster Oil Co.'s Fee 1, bad hole 1505 ft. E. L. Chapman et al's Skinner 2, lcn. J. M. Hickey et al's Jackson-Harmon 1, dr 1195 ft. Johnson & Bert Weekly's Jackson-Harmon 1, elev 3972 ft, fsh 1045 ft.

COKE COUNTY—W. C. Cates & J. S. Dennis' Mims 1, sd 1655 ft; Mims 2, spudded and sd. Mid-Kansas O&G Co.'s Lackey 1, elev 2125 ft, testing good show oil 3577-59 ft. Ray McCamey et al's McCutcheon 1, dr 590 ft.

CONCHO COUNTY—J. L. Duffey et al's Gilliam 1, spudded and sd. Jones & Liner's Jones 1, fsh 1100 ft.

CRANE COUNTY—Gulf Prod. Co.'s Waddell 7, dr 760 ft.

CROCKETT COUNTY — Barbara Oil Co.'s Cox 1, dd, elev 2051 ft, top lime 1082 ft, fsh 1942 ft. W. A. Moncrief-W. W. Donnelly et al's J. S. Todd 1, (Sec. 35), elev 2530 ft, top lime 1275 ft, passed up oil pay 1365-69 ft, dr hard gray lime 1395 ft; R. Massie 1, (Sec. 47), dr 840 ft. Donnelly-J. D. Young et al's Shannon 1, (Sec. 42), elev 2661 ft, sd 780 ft. Eppenauer Drlg. Co. & West Texas Pet. Corp.'s Noelke 1, sd 565 ft. Lewis & Daniels' Pecos River Bed 1, 1967 ft, dr 1002 ft.

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JEFF DAVIS COUNTY—Sam F. Means et al's J. Z. Means 1, sd 4005 ft.

FISHER COUNTY—Bickerstaff et al's McWhirter 1, temp abn 2000 ft. Cranfill-Reynolds et al's Willingham 2, elev 1808 ft, top lime 3071 ft, dr 3345 ft. Culberson Bros. & Mesa Oil Co.'s Griffin 1, elev 1842 ft, ur 2960 ft. J. B. Dunigan et al's Henry 1, elev 1913 ft, dr 3115 ft. Gilman-McMurray-French's Cleveland 1, elev 1973 ft, dr 3070 ft. Mid-Kansas O&G Co.'s Maggenheimer 1, lcn. Mid-Kansas & Phillips Pet. Co.'s H. J. Stephenson 1, lcn. Roeser-Pendleton & Amerada's Haught 1, elev 1792 ft, fsh 1965 ft. Texas Co. & Phillips Pet. Co.'s Hall 1, elev 2102 ft, dr 2655 ft. White Eagle O&R Co.'s Hughes 1, dr 2200 ft.

GAINES COUNTY — Pure Oil Co.'s Williamson 1, elev 3197 ft, top salt 2333 ft, fsh 4124 ft.

GARZA COUNTY — Emerald Oil Co.'s D. Boren 1, elev 2210 ft, tested dry, abn 2610 ft; J. S. Reed 1, rig.

GLASSCOCK COUNTY—Daniels & Kyle's Meek 1, elev 2792 ft, sd 405 ft. Gibson-Johnson et al's Irene Dean 1, rif. Meriwether Oil Co.'s McDowell 2, elev 2517 ft, top salt 970 ft, top lime 2445 ft, dr 3735 ft. World Oil Co.'s McDowell 1-C, (Sec. 21, Blk. 34), elev 2530 ft, testing 2000 ft oil in hole at 2351-98 ft.

TOM GREEN COUNTY—Williams et al's Wilkey 1, sd hfw 750 ft.

HOWARD COUNTY—Furhman Pet. Corp.'s Reed 1, lcn. Gibson-Johnson's Reed 1, ur 10-inch cas 945 ft. Harrison et al's Dodge 1, pumped 45 bbls oil last seven hrs., td 3257 ft.

HUDSPETH COUNTY — The California Co.'s University 1, elev 5833 ft, crooked hole, td 967 ft. Western States Oil Co.'s Gardner-Mosely 1, elev 5086 ft, sd 3155 ft; Moore 1, elev 5150 ft, sd 2760 ft.

IRION COUNTY — Furhman Pet. Corp.'s Sugg 1, Lse. 2, top salt 920 ft, top lime 1808 ft, dr 2055 ft. Irion County Drlg. Co.'s Tankersley 2, dr 505 ft. Kimbrough et al's Nutt 1, elev 2299 ft, sd 1420 ft. Kimbrough & Flinchbaugh's Tankersley 1, elev 2241 ft, sd 1020 ft. Kingwood Oil Co.'s Sugg 1, elev 2334 ft, dr black lime 6250 ft.

JONES COUNTY — J. E. Brewer et al's Goodman School Lot 1, lcn. Geo. Callahan & Worth Oil Co.'s Britton 1, dr 1215 ft. Campbell et al's King 1, spudded and sd. W. G. Clark et al's Dickenson 1, dr 615 ft; Miller 1, lcn. Condor Pet. Co.'s McDonald 1, ur cas 1905 ft. Culberson Bros. et al's Anderson 1, lcn. Grisham-Hunter Corp.'s Hester 1, elev 1855 ft, dr 2765 ft. P. K. French et al's Lesson 1, sd 215 ft. Sam Knepley et al's Horn 1, dr 510 ft. McGinley-Sigler Co.'s Martin 1, dr 1845 ft; Whittemoore 1, sd 1700 ft. Sedgwick O&G Co.'s Routh 1, elev 1730 ft, top lime 2700 ft, dr 3180 ft. E. M. Trout's O&G Co.'s Hodges 1, dr 760 ft. White Eagle O&R Co.'s Teague 1, rig.

LOVING COUNTY — Lockhart & Co.'s Hazell 1, elev 2705 ft, rig; Hazell 2, dk; Johnson 1, dr 245 ft; Hubbard Heirs 1, elev 2706 ft, top salt 700 ft, swab 30 bbls oil 4138-4205 ft; Hubbard 2, elev 2692 ft, top salt 718 ft; dr 2915 ft; Wheat 1-H, elev 2713 ft, top salt 720 ft, dr 2840 ft.

LYNN COUNTY—Hart Oil Corp. & McCamey's Edwards 1, elev 3128 ft, dr 980 ft. H. F. Miller et al's May 1, spudded and sd.

MENARD COUNTY—J. B. Holstein et al's Davis 1, lcn. Duffey & Cromwell's Winslow 1, rig.

MITCHELL COUNTY — California Co.'s Clark 2, top lime 1540 ft, dr 1850 ft. Clopton & Hammon's McKenzie 1, lcn. Jack Ellis & Atlantic's Ellwood 1, elev 2270 ft, sd 1¼ mil ft gas 633-47 ft. Republic Prod. Co.'s Scott 1, lcn. Simms Oil Co.'s Ellwood 1, elev 2237 ft, top lime 1215 ft, dr 2875 ft; Ellwood 1-A, dr 830 ft. Spence et al's W. C. Brown 1, dr 310 ft. Teas & Wheeler's Radford 1, elev 2223 ft, top salt 667 ft, top lime 1365 ft, sd 3865 ft. Westhyde Inv. Co.'s Ellwood 1, materials.

NOLAN COUNTY — L. G. Bradstreet & Co.'s Kuteman 1, rig. Phillips Pet. Co.'s Plunkett 1, rig.

PECOS COUNTY—Atlantic Oil Prod. Co.'s J. C. Trees 1, spudding. M. H. Black et al's Pecos 1, top salt 1095 ft, dr 1390 ft. Buell-Hagan's University 1-B, spudded and sd. A. R. Bell et al's Gray 1, dr hfw 995-1000 ft. Karl L. Crowley et al's R. G. Heiner 1, elev 2548 ft, dr 1105 ft. Carl Cromwell & Kimberlin's Johnson 1, lcn. Doran & McGee's Pecos 1, dr 1010 ft. Cowboy Evans et al's Pecos 1, dk. J. W. Grant et al's Turney 1, elev 2592 ft, top lime 1015 ft, sd 4590 ft. Imperial O&G Co.'s Pecos 1, lcn. Sam Kitts et al's Sherbino 1, spudding. Mauch & Krogen's Holmes 1, elev 2325 ft, top salt 535 ft, sd 1405 ft. R. E. Moore et al's Arnold 1, machine. W. A. Mocrief et al's Tippett 1, machine. J. D. O'Mara et al's Byrne 1, spudded and sd. O. J. Perren et al's H. J. Eaton 1, elev 2497 ft, top salt 1090 ft, sd making 18 million ft gas 1490-1502 ft. Phillips Pet. Co.'s Courtney 1, bad hole 550 ft. Plymouth Oil Co.'s F. A. Perry 2, rig. Schumaker et al's Williams 1, elev 2388 ft, sd repairs 1004 ft. Shell Pet. Corp. & Kirby Pet. Co.'s University 1, elev 2628 ft, dr 4435 ft. B. J. Spikes et al's Geo. Brown 1, top salt 740 ft, dr 905 ft. Talbot et al's Unsicker 1, lcn. Tidal Oil Co.'s University 1, spudded and sd. Transcontinental Oil Co.'s University 1, elev 2552 ft, top lime 1035 and 3315 ft, fsh 4312 ft; University 1-B, rig; White-Baker 1, elev 2810 ft, co 683 ft. Trees Oil Co. & Empire G&F Co.'s Trees 1, elev 2461 ft, top salt 1760 ft, dr 1985 ft. Bert Weekly et al's Byrne 1, dr 735 ft. Clayton Williams et al's W. A. Sanford 1, machine.

REAGAN COUNTY—Kemrow & Co.'s Sawyer 1, lcn. Skelly Oil Co. et al's University 4, ur 740 ft. Big Lake Oil Co.'s University 1-C, elev 2731 ft, top salt 1100 ft, dr 2425 ft; University 2-C, elev 2703 ft, top salt 1071 ft, dr 1940 ft; University 13I, dr 5225 ft.

REEVES COUNTY—Penn Oil Co.-Amerada et al's E. G. Bowles 1, elev 2783 ft, top salt 1725 ft, top Deleware sand 5240 ft, dr 5245 ft. Southern Crude & Dixie Oil Co.'s Kloh 1, dr 1315 ft. D. R. Thompson et al's Eddins 1, elev 2719 ft, top salt 1622 ft, top lime 3216 ft, brown lime 3500 ft, sd 5658 ft. Lee O. White et al's Kloh 1-A, elev 3244 ft, dr 695 ft.

RUNNELS COUNTY—Herbert Oil Co. & Vacuum's Currie 1, dr 625 ft. Independent O&G Co.'s Rollwitz 1, dr 1785 ft. Marland Prod. Co.'s Herring 1, elev 1821 ft, set 6-inch casing 3010 ft. Ira Nourse & E. Tilton's Cramer 1, elev 1775 ft, sd 3815 ft. Vacuum Oil Co.'s McMillan 4, dk. Reese & Cates' Clayton 1, sd 1185 ft.

SCHLEICHER COUNTY—Ft. McKavitt Oil Co.'s Tisdale 1, elev 2155 ft, sd hfw, 2440 ft. Interstate Explo. Co.'s Whitten 1, sd 3545 ft. Underwood Oil Co.'s Tisdale 1, spudding.

SCURRY COUNTY—R. B. Pender et al's Davis 1, elev 2208 ft, top salt 445 ft, sd 2600 ft.

STERLING COUNTY — Foster-Gracey Oil Co.'s Foster 1, elev 2260 ft, dr 2335 ft. Miller Bros. et al's Foster 1, elev 2662 ft, top salt 1140 ft, top lime 2094 ft, sd 2808 ft. Wilson et al's Ellwood 1, dr 255 ft.

SUTTON COUNTY — Phillips Pet. Co.'s Holman 1, elev 2247 ft, top lime 2315 ft, dr black lime 6475 ft. L. G. Priest et al's Allison 1, dr 1890 ft. Southern Crude & Dixie Oil Co.'s Allison 1, fsh 4445 ft.

TAYLOR COUNTY—J. B. Jameson et al's Webb 1, sd 2160 ft. Mid-Continent Pet. Corp.'s Taylor 1, elev 1933 ft, no oil after shot 30 qts, 2443-60 ft, td 3007 ft. C. M. Root Drlg. Co.'s Martin 1, dr 835 ft. Thomson et al's Hamner 1, dr 2495 ft.

TERRELL COUNTY—Milam Corp.'s Bassett 1, elev 2270 ft, dr 4760 ft.

UPTON COUNTY—Sun Oil Co.'s Long 1, elev 2631 ft, top salt 580 ft, dr 2045 ft.

VAL VERDE COUNTY—Dyer Bros. et al's Wilson 1, elev 2115 ft, fsh 2715 ft. Producers Oil Co. et al's Everett 1, dr 2375 ft. Val Vert Oil Corp.'s Bassett 1-A, elev 2069 ft, sd 3760 ft.

WARD COUNTY — Barstow O&G Co.'s Monroe-Gillespie 1, spudded and sd. Gulf Prod. Co.'s O'Brien 5, rig; Hutchings Assn. 2, rig. J-H-L Oil Co.'s Hayzlett 2, elev 2505 ft, top salt 745 ft, dr 2245 ft. Kimberlin et al's Thompson 1, lcn. J. F. Shipley et al's Monroe 1, lcn. Tex-Oil Prod. Co.'s Redman 1, sd 960 ft.

WINKLER COUNTY — M. J. Bashara et al's Fee 1, elev 2883 ft, top lime 2310 ft, cem cas and stdz 2477 ft. Liner Drlg. Co.'s Campbell 1, spudded and sd. Magnolia Pet. Co.'s Scarborough 2, rig. Prairie's Scarborough 1, elev 2914 ft, dr by tools, flow 150 bbls oil 2930-3081 ft. Shell & Llano's Scarborough 6, lcn. Texas-Canadian Oil Co. & Superior's Kloh 1, elev 3243 ft, top salt 1490 ft, dr 3260 ft. Tidal Oil Co.'s Scarborough 1, lcn.

YOAKUM COUNTY—Bert Weekly et al's Knight 1, sd 1105 ft.

MISSISSIPPI

MONROE COUNTY (Amory District)—Amory Pet. Co.'s Hall 1, 8-13-17, arr to test show green oil and gas 2868 ft. Amory Dev. Co.'s Bourland 1, 2-13-19, arr to pull 6-inch, r and reset, td 2500 ft. Amory Nat. Gas Co.'s Carter 1, 7-13-17, dr with rotary 1400 ft. Ark. Nat. Gas Corp.'s Rye 1, 22-15-17, dr hard gray sand 3234 ft. Park Bowser et al's Cowart 1, 2-12-9, waiting on drive pipe, 12½-inch, after failing to get through 200 ft Tuscaloosa gravel and sand, skidded over for new hole. (All five wells being drilled by P. J. McAlpine, contractor).

LAUDERDALE COUNTY (Meridian) — Meridian Nat. Gas Co.'s Mattie Houser 1, 33-8-18, dr shale and chalk at 1100 ft after topping Ripley chalk at 663 ft.

RANKIN COUNTY (Jackson District)—Lion O. R. Co.'s Masterfield 1, 2, 4-1, set 8¼-inch cas near bottom Wilcox formation, td 2955 ft. (Ohio Oil Co., Ark. Nat. Gas Corp., Amerada Pet. Co. and Carter et al drilling test jointly with Lion).

YALABOUSHA COUNTY (Water Valley District)—Phillips Bros.' James 1, 20-11-5, dr Selma chalk 1700 ft.

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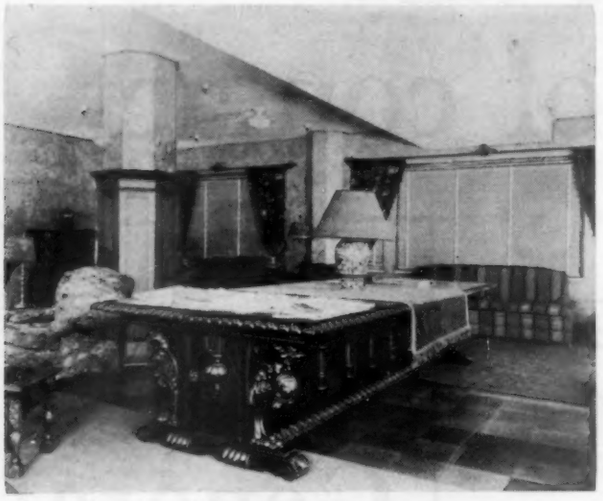
San Antonio Petroleum Club Has Attractive Quarters



The Lounge Room

SAN ANTONIO.—In an exceptionally fine building here, a group of prominent men connected with the oil business have established a club that is as much out of the ordinary as the building that houses it and the metropolis in which it is located.

The organization is the San Antonio Petroleum Club, which has 60 members, including men of San Antonio and the surrounding oil country connected with both large and small oil companies, independent operators, and a few others directly interested in the oil business. The purpose of the club is to afford convenience for social and business contact among men in the oil business; to have headquarters where these men of closely allied interests may come together for conferences, luncheons or banquets, or reading, playing billiards, or other recreation.

The club was formed only a short time ago, and although the club headquarters, located on the second floor of the Milam Building, has been furnished and is in use, the formal opening of the place will take place about the middle of April, or later.

Unique Furnishings

The club rooms, embracing half of the floor, are distinctively masculine, with most of the furniture of weathered oak, hand-carved and made especially for the club. All the furniture was made in San Antonio. One man planned and designed the furnishings for the club and supervised their making. He achieved a particularly harmonious effect. Also there is the effect of distinctiveness. Nowhere else in the world will one find dulpicates of the furniture, and the draperies and tapestries likewise are individual. No two pieces of furniture are exactly alike.

Stepping out of one of the elevators, one enters the lobby of the club headquarters, a room furnished with oak chairs. Further down the lobby or foyer, and to the left, there are two rooms, in one of which there is a billiard table, while the other is furnished with card tables and chairs. Farther on, at the south end of the foyer, is the spacious lounging room, the main room of the club. In the center of that room is a great oak table, five feet wide and 12 feet long. The top of the table is about three inches thick. It required six men to move the table into the room. At the east end of the room is a fireplace which has all the appearance of being filled with live coals, giving a very cozy atmosphere to the room. Upon close examination it is seen that the "coals" are lumps of transparent glass, and that the "fire" emanating from them is light produced electrically and throwing out no heat. The heating (or cooling) of the building is a subject on which more will be said presently.

Lounging Room

Skirting the fireplace, and extending on around the room are deep-cushioned, overstuffed chairs and divans in which, as one visitor to the club said, you can rest even if you aren't tired. The tapestries and heavy linen draperies embody an "Utopian" design, a pattern incorporating an artist's conceptions of Sir Thomas Moore's isle of perfection.

Proceeding to the west end of the main lounge, and turning back to the north, one enters the large dining room, which is also furnished in hand-carved oak, and which has tables for four persons, and will accommodate about 50 people. This room is developed in the Jacobean period; and besides the tables and chairs there is a carved Jacobean chest which is one of the most beautiful pieces of furniture in the club.

At the north end of the large dining room is an entrance to a smaller dining room running from the west side of the building back toward the east. This room is much smaller than the main dining room, having four tables. It serves as a private dining place, where a group of 16 or so men can convene for private meetings or banquets. Adjoining the east end of the private dining room is the kitchen.

The club was financed by charging membership fee of $250. There is a monthly membership due of $10, with the members paying additional for dinners or banquets.

Founders of Club

The club was founded by the following 10 men: Dr. F. L. Thomson, chairman of the board of the Grayburg Oil Company; C. A. Campbell, manager of the Milham Corporation; Sam L. Kone, president of the Kone Production Company; E. P. Zoch, independent operator; L. A. Casey of Richey, Casey & Gragg, and an independent operator; C. M. Shelden, Jr., Shelden Oil Company; P. H. Swearingen, attorney, Dixie Oil Company; B. D. Stevenson, oil editor, San Antonio Express; William F. Morgan, formerly general manager of the Southern Gas Company and now an independent operator; and Russell C. Hill. Officers are: E. P. Zoch, president; Dr. F. L. Thosmon and Sam L. Kone, vice-presidents; and C. A. Campbell, secretary-treasurer. Directors include those four officers and William F. Morgan. The other 50 members of the club include prominent oil men of southwest and west Texas.

The Milam Building, in which the club is located, is a new structure. One of its outstanding features is that it is especially constructed for heating and cooling by air currents; the builders having taken into consideration that in this region, cooling a building in summer is as important as warming it in winter. In each room there are inlets and outlets for air which is sucked in from the outside and circulated through the building. In winter, air is run through warm water, and in summer through cold water; so that the building is kept at the same temperature throughout the year; with fresh air being supplied constantly. The windows of the building are seldom opened, because of that regulation of the temperature.

In this same building on the sixteenth floor there is also another place which is of convenience to oil men. Room 1617 has been given by the management of the building to oil men in general as headquarters, the space being furnished rent-free. Whereas the

San Antonio Petroleum Club is only for its members and their guests, the headquarters on the sixteenth floor is open to the public. That room is furnished with chairs and a library table, with literature and a large collection of oil field maps available for those who want to use them, the maps being furnished by Mr. Stevenson of the San Antonio Express and by various map companies. Mr. Stevenson's offices are adjacent to Room 1617, the oil men's headquarters being next to his office so that he may furnish oil information when it is desired.

Petroleum Engineering Department Enlarged

Los Angeles.—With a view of making more effective its facilities for training men for technical and administrative positions in the oil industry, the College of Engineering of the University of Southern California has reorganized and enlarged its division of petroleum engineering.

In the future, a student seeking the degree of Bachelor of Science in Petroleum Engineering will receive during his first two college years fundamental training in chemistry, physics, mathematics and geology, as well as the elements of surveying and engineering drawing. In the third and fourth years he will receive instruction in advanced geology, in the general principles of mechanical, electrical and chemical engineering, and will specialize in courses dealing with oil production, oil field development, storage and transportation of oil, refining and utilization of petroleum, and oil land leasing.

Announcing this reorganization of the curriculum in petroleum engineering, Professor P. S. Biegler, acting dean of the College of Engineering, stated it was the aim of this course to give the prospective petroleum engineer a sound grounding in the basic sciences and mathematics, a comprehensive knowledge of the elements of civil, electrical, mechanical and chemical engineering which are necessary to a field engineer, and a thorough training in the technique of petroleum engineering. During the last two years of the course, he said, the student will supplement his classroom work in petroleum engineering with extensive laboratory practice, field work and actual experience in the industry.

"The primary purpose of this course," Dean Biegler stated, "is to train men in the elements of petroleum engineering so that upon graduation they may become immediately available for positions in the industry."

To those who desire to receive advanced training or to engage in research, the university will offer one year of graduate work leading to the degree of Master of Science in Petroleum Engineering. As further recognition of technical attainment, the university will award the degree of Petroleum Engineer to anyone who has received the bachelor's degree, has held a responsible position in the industry for at least five years and who submits a thesis evidencing a real contribution to the industry. By setting up this comprehensive curriculum in petroleum engineering and offering these three degrees the University of Southern California fully recognizes this branch of engineering as one of the family of applied sciences and make full provision for the advancement of scholarship and research in this field of technical endeavor.

Five new courses dealing with the principal phases of petroleum engineering which have been added to the curriculum are oil field development; production of oil; storage and transportation of oil; refining, distribution and utilization of petroleum products, and oil land leasing and valuation. These courses will be offered for the first time during the college year of 1929-30.

Elwood

Santa Barbara, Calif.—Barnsdall Oil Company and Rio Grande Oil Company ran their string of continuous completions in the Elwood field to 10 during the past week, successfully placing Doty 4 on production with an initial flow of 4000 barrels. The latest producer was completed at 3750 feet and is the deepest well in the field. The top of the oil sand was found at 3590 feet or several hundred feet deeper than some of the previous completions. The formation ran uniform, however, and showed no signs of water, even in the bottom. Completion of Doty 4 ran the total initial production from the 10 wells to about 45,000 barrels. Potential production of these wells is still around 35,000 barrels.

Sholom Alechem Expecting Big Oklahoma City Meeting

OKLAHOMA CITY.—More than 5000 oil men are expected to attend the Sholom Alechem International ceremonial at Oklahoma City on June 8, states Wood Dawson, Grand Crown Block of the organization, who is now busy arranging for the event, in cooperation with the junior chamber of commerce. Those in attendance will include approximately 3000 seasoned rig timbers who were induced into the organization at previous ceremonials, and 2000 green rig timbers who have yet to become acquainted with the "mysteries" of the order.

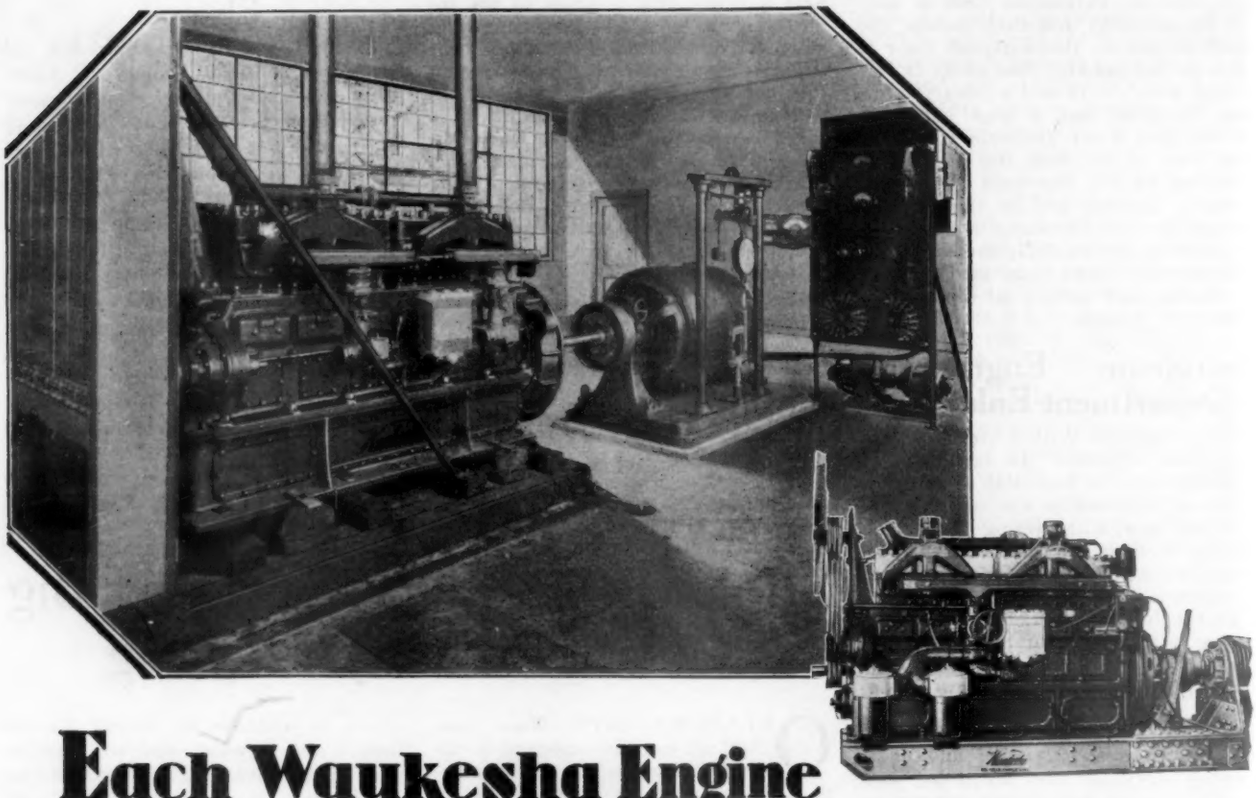
Russell Lathrop, Grand Log Book of the order, will arrive at Oklahoma City soon and will remain there until the Oklahoma City Derrick is organized. He will supervise the membership details, and assist in preparing other necessary arrangements.

Sholom Alechem day will open here officially at noon on the date of the ceremonial, and the business session, including nomination of officers for the Oklahoma City Derrick, will be held between that time and 5:00 p. m. Timbers will register at headquarters during the afternoon. Names of officers nominated will be presented for election at the night session.

Between 5:00 and 6:00 p. m., the Sholom Alechemers will parade through the city, headed by a band that will furnish music during the entire afternoon at headquarters. Following the parade, the oil boys will feast at a barbecue, and then assemble for the ceremonial and entertainment. The ceremonial will include the ritualistic work, which will be put on by the grand officers of the organization. The entertainment will consist of a number of high-class vaudeville acts, augmented with orchestral music. Grand officers, in addition to Grand Crown lock Wood Dawson, who will participate in the ritualistic work, will include: Irby Kolb of Duncan, Grand Slush Pit; Ward Merrick of Big Spring, Texas, Grand Walking Beam; C. W. Tomlinson of Ardmore, Grand Rock Hound; Jack Reardan of Ardmore, Grand Tool Pusher; Earl Appleton Brown of Ardmore, Grand Shyster; Bill Krohn of Ardmore and Oklahome City, Founder and Skidded Rig; and Burney Phillips, Grand Inquisitor.

Other grand officers of the Sholom Alechem International comprise the Council of Grand Roustabouts, which consists of: Erle Halliburton of Duncan; F. C. Hall of Chickasha; C. B. Goddard of Ardmore;Wirt Franklin of Ardmore and Oklahoma City; H. B. Fell of Ardmore, F. W. Merrick, Ardmore; Bill Barrett, Shawnee; S. D. Butcher, Shawnee; and Ed Frank, Tulsa. Grand Skidded Rigs, in addition to Krohn, include: R. A. Birk of Wichita Falls, Texas; Lloyd Nobel of Ardmore, and Otto Bradford of Ardmore.

The Sholom Alechem International is the only organization of its kind in the petroleum industry. It is an order of good-fellowship—the playground of oildom—where the oil boys meet on common ground and on equal terms. Millionaire operators and rousterbouts rub elbows in the Sholom Alechem, and the popularity which the organization enjoys indicates that it is a noble asset to a great industry. Sholom Alechem ceremonials are in reality reunions of members of the petroleum industry and many a tale of oil days of old is told when the boys meet.



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Manufacturers of gasoline-powered equipment who are most careful of their reputation use Waukesha Ricardo Head Engines. Write for booklet. Oil Industry Equipment Division, Waukesha Motor Company, Waukesha, Wisconsin. Offices: New York, Tulsa, Houston, San Francisco.

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NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Flow Head for Air or Gas Lift

HERCULES TOOL COMPANY

The new Hercules Tool Company's flow head is made with either a 45 or 90 degrees "T" or "Y" type body, designed with an upward curved outlet that eliminates friction.

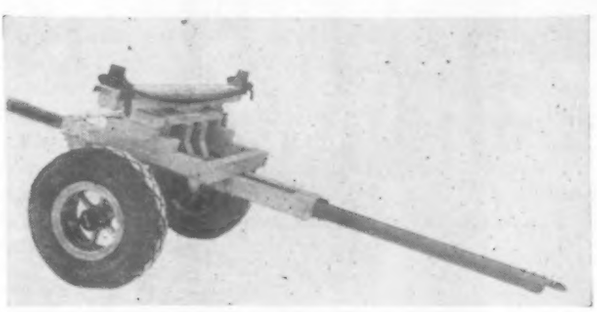
The top section or flow head packing bowl screws down into the top of the body. The packing bowl is equipped with three slips which support the tubing by gripping completely around it. On top of the slips rests a packing ring which is compressed by a packing nut that screws down into the packing bowl and packs off around the tubing.

The body of the flow head is equipped with a regular casing head top and set screws, so if it is necessary to run tools into the well an oil saver can be used. This can be accomplished by unscrewing the top section and removing it from the flow head body.

Inside diameter of the body is the same size as the outside diameter of the casing on which it is made up.

The body is made of electric steel casting and the top section or packing bowl is made of forged steel, making the flow head an exceptionally strong and serviceable device. It will hold a working pressure of 3000 pounds and carry a hanging weight of over 300,000 pounds. It is very simple and compact and is adaptable to all wells. It is made for all standard sizes regular and A. P. I. casing.

For additional information write the Hercules Tool Company, P. O. Box 286, Tulsa, Oklahoma.



Spencer Trailer

New Oil Field Trailer

SPENCER TRAILER COMPANY

The Spencer Trailer Company of Augusta, Kansas, has placed a newly developed line of Timken-equipped trailers on the market, known as the pole type. These trailers are specially designed for heavy duty service, such as hauling casing in oil fields, hauling telephone or telegraph poles or pipe. The complete line consists of four trailers of different ratings: the one, two, three, and five-ton. The general design and construction is the same for the whole line, except for the difference in size, and in some of the construction details made necessary by the variation in load capacity.

The frames are of simple but exceedingly compact and strong construction. The frame proper is made from heavy, seasoned hickory timbers, thoroughly reinforced by steel plate sheathing and strong steel cross members.

The tongues may be either steel pipe or oak, as desired. The former are furnished either 16, 18, or 22 feet long, and the latter in lengths up to 18 feet. The pipe poles are made from 3½, 4½, or 5-9/16 inch seamless tubing of ¼-inch section. The movable pipe tongue fits in a sleeve which is supported between the oak sections forming the stationary tongue, and, when adjusted to proper length is locked by means of a pin passing through the sleeve. The oak tongues are made from a single baulk, 4 x 6 inches square which slides between the two stationary members. It is also pinned in place when adjusted. Tongues of both types are equipped with specially designed hitches, either of the pintle, or the universal pin type.

The frame is supported from the axles by semi-elliptical steel springs. The axles are made from high grade shafting steel, with the bearing seats accurately ground to size. The axle size varies from 1⅞ to 3½ inches in diameter, according to the trailer capacity. Timken bearings are used in all cases, the mounting being rather unusual for this type of service. Two bearings are used for each wheel, the cups, or outer races being pressed against shoulders in the hub of the wheel.

The wheels proper may be either wire, disc, or spoke, as desired, the type furnished depending somewhat on the service conditions to be met. Wire wheels are furnished only on the one- and two-ton sizes.

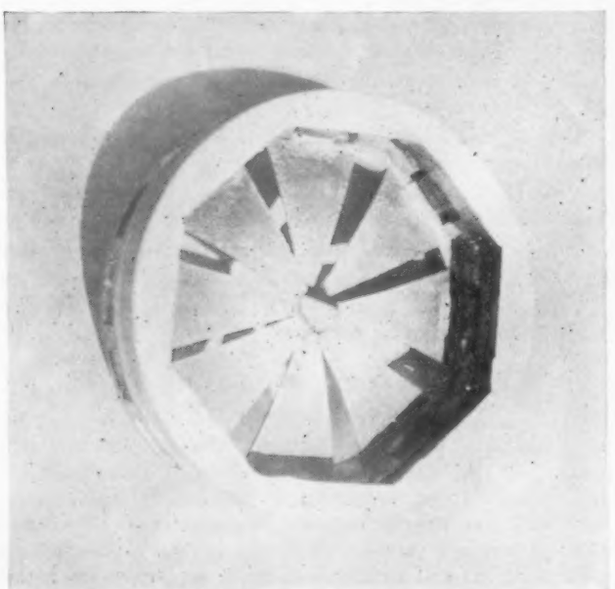
A 40-page book, No. 1167, describing Link-Belt Company's stock of 15,000 sprockets, made from more than 1300 separate patterns, has just been issued by Link-Belt Company. The one-day shipping service is featured in listing these sprocket stocks in book form.

A copy of the book will be mailed interested persons upon request to the company, 300 West Pershing Road, Chicago.

New Core Catcher

ALCO OIL TOOL COMPANY

Alco Oil Tool Company of Compton, California, has recently produced a new core catcher which works by means of loosely anchored, stiffened steel prongs that close



Alco Core Catcher

up to form a solid bottom when the core has been secured.

The prongs are devised so as to hang naturally closed unless a core is being taken. As shown in the accompanying photograph, a bottom almost solid is formed by the six prongs, with the exception of a small hole in the center for fluid drainage, when the equipment is idle. When coring, the prongs open, giving clearance for material sought.

The hinges hold the prongs and allow them to act freely to prevent hanging. The chief purpose of this new piece of equipment is to give assurance of holding the entire core after it has been taken in soft formations.

Duplex Electric Bomb

ZERO HOUR TORPEDO COMPANY

Zero Hour Torpedo Company, Tulsa, has recently placed its latest Duplex model oil well time bomb on the market. The new Duplex model, though of the same size as earlier models, contains two watches, each connected through a separate circuit to two blasting caps, connected together in parallel. Two timing mechanisms, each independently powered by its own watch, are enclosed in the same metal, fluid-tight container, which formerly held one only. The manufacturer believes that failures of the Duplex to explode will be reduced to a minimum.

Among other new features is an improved spring contact or "firing pin" which permits the hour hand of the watch to be moved past it, either forward or backward, any number of times, as in testing, without variation of the firing time from the zero hour, at which the pin was originally set.

Another is the incorporation of "plug and socket" connectors for connecting the blasting caps to the timing mechanism. The sockets are built into the mechanism. To the plugs two electric igniters are connected in parallel at the factory and these connections carefully tested with galvanometer. The tested plug-igniter assembles, enclosed in a separate small container, are shipped with the bombs. Loading operations are thus reduced.

Zero Hour Torpedo Company bombs are made in three types, all of the same size:

Type A. One watch with one to 11 hours setting range, one electric circuit, two blasting caps.

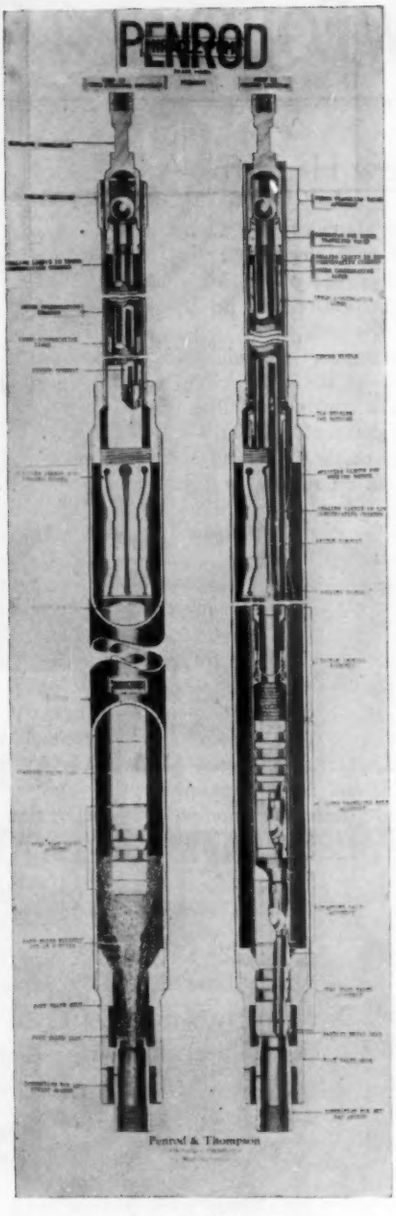
Type B. Two watches with two to 22 hours setting range, two separate circuits, four blasting caps.

Type F. Two watches with one to 11 hours setting range, two electric circuits, four blasting caps.

Further information and descriptive literature will be sent by the manufacturer on request.

VALVE BULLETIN

A 90-page booklet just completed and ready for distribution covering field and refinery bronze, iron and steel valves, is a William Powell Company, Cincinnati, Ohio, publication. It carries a number useful dimension tables and other information of value to engineers. Covered in this booklet are valves for oil and gas fields, oil and gas pipe lines, gas and air lifts, valves for appliances for gather lines and loading rack, valves for oil cracking stills and steam plants and valves for natural gasoline plants.



Penrod Pump

Penrod Pump

PENROD & THOMAS

Penrod & Thompson, Okmulgee, Oklahoma, manufacturers of the Miracle Pump, now have more than 4000 Penrod & Thompson barrels in operation in Mid-Continent and foreign fields. Features of this new design in oil well pumping that are unusually significant are developed to keep sand from the working parts, to afford a large fluid capacity and for combating the water problem.

Mutually compensating chambers above the piston cups and packing are designed to receive and trap a quantity of relatively pure high gravity tubing fluid. This fluid thus admitted is held separate from the fluid being pumped, and acts as a sealing and protecting medium by which piston cups and packing are protected against sand and the increased pressure on the up-stroke. The purpose of this is to reduce the wear to the vanishing point.

Another feature, the dual foot valve for the working barrel, allows seating and unseating under any condition encountered. This valve is held in its seat solely by the gripping sleeve engaged with the upper portion of the work-

ing barrel. It carries three cups designed to be received in an upper seat formed in the foot valve shoe and the arrangement prevents sand from freezing the parts in place.

A new arrangement of the combination is that of handling sand without pulling rods or tubing over a long period. Sand is held in suspension and pumped out of the well during action. Between intervals of pumping the small amount of sand which settles from the tubing fluid is received in the large capacity housing provided for that purpose.

Literature describing fully the Penrod & Thompson pumping equipment will be mailed to interested persons upon request to the company at Okmulgee.

Alco Oil Tool Expands

An expansion program covering the extension of sales relations, marketing facilities and manufacturing processes has been announced by Hubert E. Allen, president of the Alco Oil Tool Company at Compton, California.

H. E. Allen

The extent of this new expansion program will cover a period of months and will not cease until the directors of the company feel that they have reached the maximum height necessary for the trend of modern business procedure.

Lloyd Defenbaugh, formerly in charge of field service operations, has been appointed assistant in charge of sales operations for the Alco Sales throughout the world. Fred Bennett, formerly in the service department with Mr. Defenbaugh, has been promoted to field salesman.

Lloyd Defenbaugh

Additions to the field service force, other than the two previously mentioned, include C. L. Flanagan, recently with the Continental Oil Company at Oil City, Louisiana, as field superintendent and M. L. "Ted" Chaney, formerly with the H. C. Smith Manufacturing Company as a field service man. Chaney is now in Ventura as a field salesman. He covered this territory previously to this for the H. C. Smith Company.

Fred Tieman has been placed in charge of Reed Roller Bit Company's Lake Charles, Louisiana, plant, which was built to service Barrett-Robishaw drilling-core bits and other Reed equipment handled in that territory.

Tieman came to Reed Roller Bit Company from South Louisiana fields, where he formerly served the Ged Iron Works' machine shops, following several years in the field with producing companies. He was educated at Syracuse and Cornell Universities, was engaged in flying instruction during the World War and commissioned as lieutenant.

Fred Tieman

Oil Well-Wilson-Snyder Merger

Merging of Oil Well Supply Company with Wilson-Snyder Manufacturing Company last week represents the consolidation of two of the oil country's leading concerns, and forecasts a wide expansion by both. The combine, which became effective May 1, will not alter the sales policies of either company, and both will continue to distribuate independently.

The greatest effect to come from Oil Well Supply Company-Wilson-Snyder Manufacturing Company combination is the acquiring by each of the various facilities for manufacturing had by the other. Thus a more economic program of producing their many products has been made possible.

Control of the merged concern will be with Oil Well Supply Company. Benjamin F. Harris, formerly vice-president and general manager of Wilson-Snyder Manufacturing Company, will be president of Oil Well Supply Company, succeeding Walter C. Carroll, who becomes chairman of the board of directors. E. W. Crisswell will be secretary and H. H. James will be treasurer of Wilson-Snyder Manufacturing Company.

Oil Well Supply Company has manufactured no refinery equipment. Wilson-Snyder Manufacturing Company is one of the oldest manufacturers of hot oil pumps, pipe line pumps, centrifugal pumps and slush pumps. Many of the latter company's lines will either open new fields for Oil Well Supply Company or are complementary to existing products.

Wilson-Snyder Manufacturing Company, which operates its plant at Braddock, Pennsylvania, was founded in 1874, and incorporated in 1886. Its manufacturing operations will continue as a distinct organization at this point, and its sales activity will also be kept separate.

The consolidation materially improves the position of Oil Well Supply Company by rounding out its operations in the hot oil and line pump fields. Each of the two concerns, through this merger, has availed itself of new facilities for both manufacturing and distributing, although both will independently operate as in the past.

Chicago Pneumatic Tool Company, New York City, is mailing out Bulletin 797, fourth edition, which describes the company's portable compressors, gasoline engine driven. This bulletin is in supplement form for adding in loose-leaf note books to former editions from the company.

Reed Roller Bit Company's Lake Charles Shop

W. K. M. Personnel Additions

LEE J. HEWITT

Lee J. Hewitt, formerly shop superintendent of the Williams Iron Works, Tonkawa, Oklahoma, and for years closely associated with oil field mechanical problems, has been appointed assistant shop superintendent of W-K-M Company, Houston. He has been placed in charge of production in the company's Houston shops, and will specialize in oil field equipment, both drilling and production, made and distributed by the company.

Mr. Hewitt will spend most of his time in the shops, but will frequently get into the fields in close touch with late developments regarding equipment and methods.

W. L. MARTIN

W. L. Martin, formerly connected with the Frank B. Crowell Company, Tulsa, and for many years drilling and production superintendent for a number of Mid-Continent oil companies, has joined the field sales staff of the oilfield division of W-K-M Company, Houston.

He has been assigned to special sales work in the Seminole district temporarily, but will probably be shifted to a permanent territory in the near future.

HOMER THORNHILL

Homer Thornhill, formerly store manager for the Continental Supply Company at Nocona, Texas, has joined the field sales staff, oil field division, of W-K-M Company, Houston.

Mr. Thornhill, who made an exceptional record with the Continental Supply Company, becomes district manager for W-K-M Company in Kansas, and will make his headquarters at Wichita.

Although concentrating particularly on drilling and production equipment manufactured by the W-K-M Company, Inc., he will be prepared to render sales or service assistance to Kansas customers of his company on pipe line equipment also.

E. W. HOBSON

E. W. (Ed) Hobson, formerly special traveling representative for the Durant Motors Company, and more lately associated with the White Motor Truck Company, Tulsa, has joined the field sales staff of the oil field division of W-K-M Company, Houston.

Mr. Hobson will have charge of the company's new production equipment demonstrator, a three-ton White truck fully outfitted with all of the production equipment manufactured and sold by W-K-M Company. The demonstrator carries with it the following tools and equipment: W-K-M tubing catchers, sucker rod elevators, sucker rod hangers, tubing slips, regular type; tubing slips, deep well type; tubing tongs, oversize hydraulic standing valves, W-K-M-Law gate valves, W-K-M Gearench lay tongs, deep well winch mounted on a 15-30 McCormick-Deering tractor, W-K-M truck winch.

The demonstrator will be routed through all of the Mid-Continent fields, North Texas, West Texas, South Texas, Louisiana, Arkansas and Rocky Mountain district.

Full and complete demonstrations will be made on the leases of all oil companies interested in the production methods sponsored by the W-K-M Company.

CHAMPION & BARBER

Frank Champion, Jr. has become associated with Dewey Barber, forming "Champion and Barber, Inc." and succeeding the New Method Pipe Slotting Company.

The new company will specialize in screen pipe and proven oil field specialties.

Mr. Champion was for nearly four years assistant superintendent of the Rice-Ranch Oil Company. Later, he was sales manager for three and a half years for the Pacific Wire Rope Company, and only recently resigned his position as sales manager for the Lorraine Corporation, which he had held for a year and a half.

Mr. Barber was the founder of the New Method Pipe Slotting Company, operating under that name for the past four and a half years. It was first known as the D. R. Barber Company.

The new company has plants in Long Beach and Taft, with facilities to serve all the California fields. The main offices of the new company are located in Suite 506, Subway Terminal Building, Los Angeles.

NEW NOVO DISTRIBUTORS

Novo Engine Company, Lansing, Michigan, has recently added nine new concerns to its list of distributors. Names and locations of these distributors are as follows: Jersey Contractors Equipment Company, 1020 West Eighth Street, Plainfield, New Jersey; Fitzgerald & Hudson, 150 Nassau Street, New York City; Fred Lemcke, Park and Liberty Avenue, Jackson, Michigan; Wylie Brothers, Inc., Tulsa; R. L. McDonald, Inc., Springfield, Missouri; Anderson Tractor & Equipment Company, No. 1 W. Chapel Road, Biltmore, North Carolina; Tennessee Tractor Company, 208 Fourth Avenue S, Nashville, Tennessee; Mine & Smelter Equipment Company, 306-12 South Seventh Avenue, Phoenix, Arizona; and Lund & Company, 425-28 Dooley Block, Salt Lake City.

R. T. McClelland, Inc., of Oakland, California, who has been a Novo Engine Company distributor for several years, is now located in San Francisco, and known as Krantz-McClelland, Inc., 522 Bryant Street.

Hill, Hubbell & Company, San Francisco, has published a new 168-page catalog in loose-leaf form describing its paints serving the producing and refining branches of the industry. The paints, varnishes, enamels, biturine coatings and special technical paints are illustrated in all colors by sample pastings along with reading matter.

Examples of Hill, Hubbell & Company's paint jobs are given in photographs carried in this catalog, including jobs on tank ships and tank cars, pipe lines and various field equipment.

A copy of the catalog may be secured by writing the company.

The American Association of Petroleum Geologists is selling its most recent publication, "Structure of Typical American Oil Fields," Volume 1. This book is a study of the relation of accumulation of oil and gas to structure in typical fields of the United States, and is made up of papers by geologists who are considered most familiar with the fields about which they write. Volume II of this work is in manuscript form and probably will be published before the end of this year.

International Harvester Company of America, Inc., 606 South Michigan Avenue, Chicago, has a four-page folder in two colors describing new speed trucks in four sizes. A copy of this folder will be furnished interested persons upon request to the above address.

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Squeaks from the Bull Wheel

William Allen White, spotting an advertisement for spats, explodes as follows in his Emporia Gazette: "Here's your chance, willy-boys. Step up, all you male sopranos, and you, too, you big mincing he-pansies, with the sensitive shanks. Drag Kansas' reputation for virility in the dust, but wear your spats by all means. All you consumers of banana splits and marshmallow sundaes, you can't afford to risk a draft on your tootsies in such unsettled weather as this. Here is a bargain which every lisping, wrist-watch wearer, every velvet-voiced masculo-feminine compromise, every chattering nance, every gossamer-winged chorus man, every wand-bearing Reginald with penciled brows, should be interested in."

A couple of young ladies who were visiting a western city decided that they would go horseback riding, and the groom asked one of them whether she would prefer the flat English saddle or the Western saddle with a horn. "The flat saddle," said the young thing, "because we aren't going to ride in any traffic and won't need a horn."

Flapper: "Grandfather, I understand that in your day the girls set their caps for the men."

"Well, maybe so—but not their kneecaps."

A couple of farmers had been leisurely bargaining for a cow for over an hour. Finally the prospective buyer came to the point.

"How much milk does she give?" he asked.

"Wal, I don't rightly know," replied the owner, "but she is a darn good natured critter and she'll give all she can."

Mrs. Tugson had bought a perambulator on the time payment system. For month after month she had visited the shop which sold it to her, handing over her meager installments. Her visits were so numerous that she became quite well known to the assistant who served her.

At last the time arrived when Mrs. Tugson had paid in full. The assistant bade her a touching farewell as he gave her the receipt.

"I shall miss you, Mrs. Tugson," he said. "You've been such a regular customer. Er—how is the baby getting on now?"

Mrs. Tugson gave a satisfied smile.

"Very well, thank you," she replied. "He's getting married next week."

He had never been outside the country, and neither had she, but both were recounting their experiences abroad.

"And Asia. Ah, wonderful Asia! Never shall I forget Turkey, India, Japan—all of them. And most of all China, the celestial kingdom. How I loved it!"

She held her ground.

"And the pagodas; did you see them?"

"Did I see them?" She powdered her nose. "My dear, I had dinner with them."

"The ladies that just passed were Mrs. John Doe and her niece. Her niece is rather good looking."

"Don't say 'knees is,' say 'knees are'."

Who told you to make my car that color?

Your wife, sir.

Pretty, isn't it?

"No Smoking" in six languages, and every one means what it says.
—Sign on a Shell tanker.

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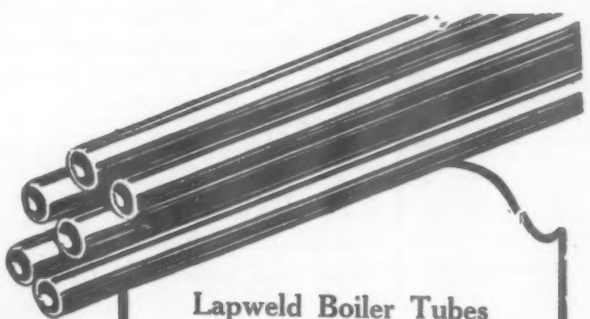

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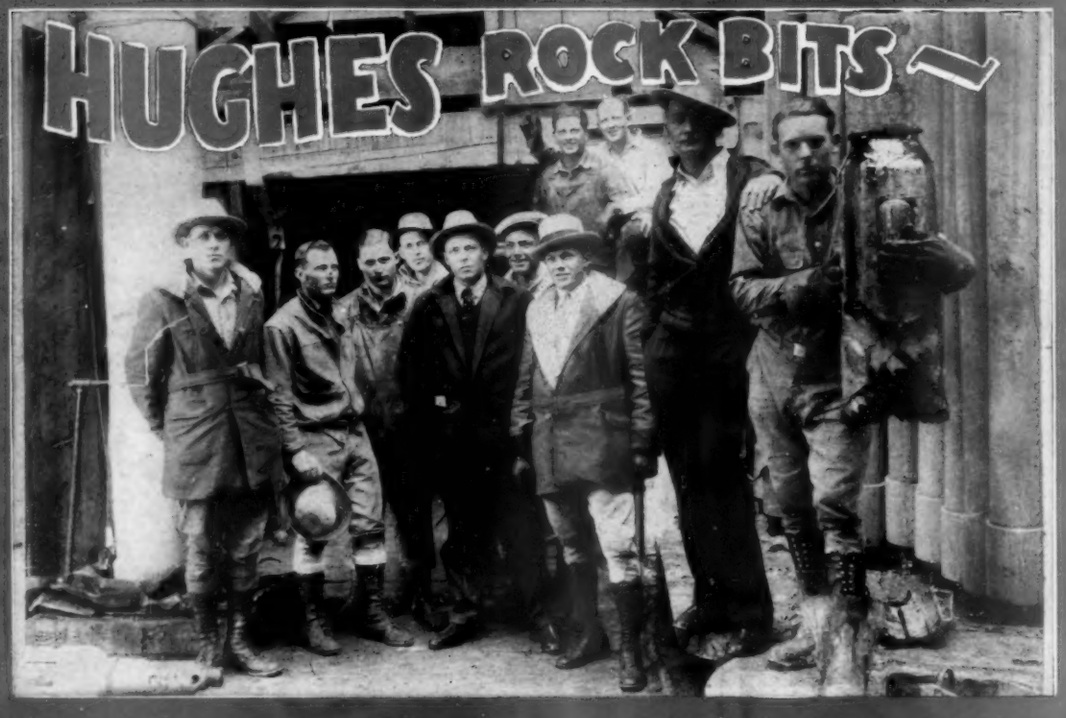

The above photograph was made at the Texas Production Company's Well No. 11, Knowlton Lease, Craig, Colorado. G. H. Vaughn Drilling Company, Contractors. Depth of hole—4343 feet—of which 4163 feet was made with 31 sets of Hughes Self-Cleaning Cones.

Actual drilling time—47 days.

This record was made in temperatures ranging from 20° to 50° below zero.

Shown in the picture are: B. Johnson, Roy Bodkins, J. F. Ellis, E. R. Skinner, P. H. Vaughn, J. C. Crane, J. A. May, Geo. Junes, and T. G. Maxwell.

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